

 **INTEGRATED SYSTEMS**™

IVX500

**INSTALLATION AND FIELD
MAINTENANCE MANUAL**

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INTEGRATED  SYSTEMSTM

IVX500

INSTALLATION AND FIELD MAINTENANCE MANUAL

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FCC REGULATIONS

IMPORTANT:

1. The Voice Processing Board complies with Part 68 of the U.S. Federal Communications Commission (FCC) rules. On this board is a label that contains the FCC registration number and ringer equivalence number (REN). Customers connecting this board to the telephone network shall, before such connection is made, give notice to the telephone company of the particular line(s) to which such connection is to be made, and shall provide the telephone company with the following information:

- Complies with Part 68 of FCC rules
- FCC registration no.: 1A92PJ-10975-VM-E
- Type of required interface jack: RJ14
- Sequence in which lines are to be connected
- Ringer equivalence number (REN): 0.3A, 0.3B

NOTE: The REN is used to determine the quantity of devices which may be connected to the telephone line. Excessive RENs on the telephone line may result in the devices not ringing in response to an incoming call. In most, but not all areas, the sum of the RENs should not exceed five (5.0); contact the telephone company to determine the maximum REN for the calling area.

The telephone company should also be given notice upon final disconnection of this board from the particular line(s).

It is also the responsibility of the customer to provide the telephone company with registration numbers of any other devices which are configured for connection to the telephone network.

2. This board cannot be used on public coin service provided by the telephone company. Connection to party line service is subject to state tariffs. (Contact the state public utility commission, public service commission, or corporation commission for information.)
3. If this board causes harm to the telephone network, the telephone company will notify the customer in advance that service may be temporarily discontinued. But if advance notice is not practical, the telephone company will notify the customer as soon as possible. Also, the customer will be advised of the right to file a complaint with the FCC, if necessary.
4. The telephone company may make changes in its facilities, equipment, operations, or procedures which may affect the operation of this board. If so,

the customer shall be given advance notice so that any necessary modifications can be made in order to maintain uninterrupted service.

5. If trouble is experienced with this board, contact a local authorized factory service representative for repairs and/or warranty information. The customer, users, and unauthorized technicians should not repair, make adjustments to, or attempt to service this board in any way.

In the event of trouble with the telephone line(s), this board must be disconnected from the telephone line(s). If trouble ceases, the board must be repaired by an authorized factory service representative. If the trouble continues to occur with the board disconnected, the telephone company should be notified that they have a problem. If this is the case, repairs or adjustments made by the telephone company will be made at their expense.

WARNING: This board generates and uses radio frequency energy and if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, may cause interference to radio and television reception. It has been type tested and found to comply with the limits for a Class A computing device in accordance with the specifications in Subpart J of Part 15 of FCC Rule. Operation of this board in a residential area may cause unacceptable interference to radio and TV reception requiring the operator to take whatever steps are necessary to correct the interference. However, there is no guarantee that interference will not occur in a particular installation. If this board does cause interference to radio or television reception, which can be determined by turning the board off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient the receiving antenna
- Relocate the board with respect to the receiver
- Check that the board and receiver are not on the same circuit; the board's system must be powered from an isolated, dedicated AC outlet

If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions. If RFI problems persist, contact Inter-Tel Customer Support.

The board is also registered with the Canadian Department of Communications (DOC). If the board will be connected to Canadian lines, contact the local telephone utility for any additional restrictions.

LIMITED WARRANTY

For a period of one (1) year from the date of shipment to Buyer, INTER-TEL warrants the Equipment (except for fuses and lamps) to be free from defects in material, workmanship, or both, and to comply with specifications for the Equipment, as set forth in the *Installation and Field Maintenance Manual*. Buyer's sole and exclusive remedy for breach of this Limited Warranty shall be to have the defective Equipment (or parts) repaired or replaced at INTER-TEL's option. Shipping costs incurred returning warranty work to INTER-TEL shall be paid for by the Buyer. *This Limited Warranty extends only to the Buyer, not to any customer, user, or third party.* This Limited Warranty does not apply to Equipment (or parts) damaged by improper handling, normal wear and tear, accidents, lightning damage, negligence, or improper use or maintenance, and does not apply to Equipment altered without authorization by INTER-TEL. This Limited Warranty does not extend to any claims, suits, damages, liabilities, costs, and expenses arising from any act, action, or inaction of Buyer. Although the Moss-Magnuson Act should not apply, in the event that it is held to apply by a court of competent jurisdiction, the implied warranty of fitness for a particular purpose shall extend for the one-year (1-year) period from the date that the Equipment was shipped to the Buyer.

THIS WARRANTY IS IN LIEU OF AND EXCLUDES ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THIS LIMITED WARRANTY. IN NO EVENT SHALL INTER-TEL BE LIABLE FOR LOSS OF ANTICIPATED PROFITS, INCIDENTAL OR CONSEQUENTIAL DAMAGES, LOSS OF TIME OR OTHER LOSSES INCURRED BY BUYER IN CONNECTION WITH THE PURPOSE, POSSESSION, OPERATION, OR USE OF THE EQUIPMENT, SUCH CLAIMS BEING EXPRESSLY WAIVED BY THE INSTALLING COMPANY.

For complete information on returning equipment, refer to the current Inter-Tel *Material Return Policy* (document part number 835.1065). This document includes specific information on the following subjects: warranty, procedures to follow when returning equipment, equipment damaged in shipment, insurance, repair policy, and advance replacement policy.

SPECIFICATIONS AND INSTALLATION

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1. INTRODUCTION

1.1 The Inter-Tel IVX500 System is a specially-equipped personal computer (PC) that can be connected to a wide variety of telephone systems to provide integrated voice processing features, such as voice mail, automated attendant, call routing announcement, and directory services.

1.2 The IVX500 System can be used with the following Inter-Tel Integrated Systems, Inc. telephone systems:

- IMX 2448
- IMX 1224/2460
- IMX 256
- IMX 416/832
- GMX-48
- GMX-152D
- GMX-256
- GMX-416/832
- GLX-Plus
- AXXESS

1.3 The IVX500 System can also be used with the following Premier Telecom Products, Inc. systems:

- ESP
- ESPMDX
- ESPDX

1.4 The IVX500 System can have up to sixteen ports, with each port requiring its own dedicated single-line circuit.

2. INSTALLATION AND PROGRAMMING OUTLINE

2.1 IVX500 System installation and programming is performed in the following order. Detailed instructions and diagrams are located throughout the rest of the manual.

- (1) Review the hardware requirements in the APPLICATION & TELEPHONE SYSTEM SET-

UP section for the specific telephone system that will be connected to the IVX500 System.

- (2) Connect the IVX500 PC to the telephone system as outlined in this section of the manual.
- (3) Review the FEATURES section to determine the specific applications that will be used (e.g., automated attendant, voice mail, etc.).
- (4) Program the telephone system to use the desired applications as outlined in the APPLICATION & TELEPHONE SYSTEM SETUP section (e.g., single-line port setup, hunt group programming, message waiting notification, etc.).
- (5) Configure and program the IVX500 System as outlined in the PROGRAMMING section (e.g., applications and mailbox programming, etc.).
- (6) Check each application to ensure that it is working properly. If necessary, refer to the TROUBLESHOOTING section for additional help.

3. SYSTEM CAPACITIES

3.1 Some of the IVX500 System features have maximum capacities that are dependent on system resources. The features with such capacities are listed in the following table.

FEATURE	CAPACITY
Voice Ports	16
Applications per System	25
Mailboxes and/or Extension IDs per System	500
Voice Mail Group Lists per System	100
Members per group list	100
Remote Message Notification	
Numbers per mailbox	2
Tables per system (for pager notification and outgoing access)	10
Custom Recordings per System	50
Quick Message Retrieval Applications per System	1
System Passwords	4

4. IVX500 SYSTEM SPECIFICATIONS

A. PC REQUIREMENTS

4.1 The IVX500 PC is equipped with special voice processing circuit cards and applications software. For complete installation instructions, refer to page 1-5.

4.2 The IVX500 PC requirements are:

- IBM-compatible
- 80386 (33MHz) or higher microprocessor (with turbo mode always enabled)
- MS-DOS version 6.2 (do not use the DoubleSpace or MemMaker utilities)
- Minimum 4MB RAM
- Minimum 105MB hard disk drive
- 3½-inch (1.44MB) double-sided/high-density floppy disk drive
- Disk Controller Card
- Two COM ports (RS-232-C serial communications ports)
- Specially-designed Audio Interface Card (AIC)
- Specially-designed Voice Processing Cards (VPCs) — both AC-ringing and DC-ringing two-port and four-port versions are available
- Specially-designed applications software
- Capacity to house at least five full-size (16-bit) circuit cards (one for the Disk Controller Card and one for each of the up to four VPCs)
- Optional parallel port and printer for producing various reports
- Optional ASCII-type programming terminal for diagnostics (and, if necessary, for loading voice prompts only)

4.3 For remote database programming and maintenance/diagnostics, an external modem is also needed. (See PROGRAMMING, page 3-10, for additional information on remote system access.)

B. APPLICATIONS SOFTWARE

4.4 Each new IVX500 PC is shipped with the applications software already installed on the hard disk drive. In addition, 3½-inch floppy disks containing the applications software are also included. (For information on the IVX500 database programming software also included with the system, refer to the programming PC specifications on the next page.)

C. AUDIO INTERFACE CARD

4.5 The Audio Interface Card (AIC) is a specially-designed software key circuit card that allows the applications software to properly control certain PC functions. It also provides a watchdog timer function. The system will not operate properly without this card.

D. VOICE PROCESSING CARDS

4.6 There are four different models of Voice Processing Cards (VPCs) available: 2-Port AC-Ringing, 2-Port DC-Ringing, 4-Port AC-Ringing, and 4-Port DC-Ringing.

4.7 Each 2-Port VPC provides up to two audio interface ports for communication between the telephone system and the IVX500 PC. Each 4-Port VPC provides up to four audio interface ports. As many as four VPCs can be installed in the IVX500 PC for a maximum of sixteen ports.

4.8 There is one RJ14 (four-wire) modular jack on each 2-Port VPC, and there are two RJ14 modular jacks on each 4-Port VPC. Each jack supports two ports. The two inside wires are connected to one dedicated single-line circuit and the two outside wires are connected to a second dedicated single-line circuit. (For details, refer to the installation procedures beginning on page 1-5.) On 4-Port VPCS, the ports are assigned as follows:

	4-PORT VPC #1		4-PORT VPC #2	
	JACK 1	JACK 2	JACK 1	JACK 2
2 INSIDE WIRES	PORT 1	PORT 3	PORT 5	PORT 7
2 OUTSIDE WIRES	PORT 2	PORT 4	PORT 6	PORT 8

E. MESSAGE STORAGE SPACE

4.9 The amount of voice mail message storage space available depends on the size of the hard disk drive installed in the IVX500 PC. Listed below are the disk drives currently available and their approximate message storage capacities:

- 105MB = 9 hours
- 200MB = 18 hours
- 340MB = 31½ hours

F. DIAGNOSTICS

4.10 For advanced troubleshooting purposes, the IVX500 applications software includes special diagnostics. If an IVX500 applications problem cannot be resolved, Customer Support may instruct the installer on how to use the IVX500 diagnostics.

G. OPTIONAL PRINTER

4.11 An optional, customer-provided parallel printer can be installed to print various reports.

H. OPTIONAL MODEM

4.12 An optional, customer-provided external modem can be installed for remote database programming and maintenance/diagnostics. (Refer to page 3-10 in PROGRAMMING for additional information on remote system access.)

5. PROGRAMING PC SPECIFICATIONS

5.1 In addition to the applications software, the IVX500 System also includes database programming software that must be loaded on a customer-provided PC for on-site or stand-alone/remote programming.

5.2 The programming PC requirements are:

- IBM-compatible
- 80286 or higher microprocessor (80386 recommended)

- 5 megabytes (MB) available memory on the hard disk drive
- 3½-inch (1.44MB) double-sided/high-density floppy disk drive
- Windows 3.1
- MS-DOS 3.3 or higher (MS-DOS 6.2 recommended)
- 1 MB available RAM (2 MB recommended)
- EGA or better graphics monitor (VGA recommended)
- COM port (RS-232-C serial communications port)
- A programming mouse is optional but recommended (if a serial mouse is used, install on an unassigned COM port)

5.3 For remote database programming and maintenance/diagnostics, an internal or external modem is also needed. (See PROGRAMMING, page 3-10, for additional information on remote system access.)

5.4 To connect the customer-provided programming PC to the IVX500 PC, refer to page 3-10 in PROGRAMMING.

6. IVX500 PC INSTALLATION

6.1 This section describes the recommended procedures for installing the IVX500 System.

NOTICE

This *Inter-Tel IVX500 Installation and Field Maintenance Manual* instructs certified field technicians on the proper installation practices for the Inter-Tel IVX500 System. This manual does *not* provide step-by-step instructions for premises wiring practices as dictated by the National Electrical Code, which includes, but is not limited to, cable layouts, cable installation, AC power installation, proper AC grounding, eliminating or preventing external interferences (including, but not limited to, RFI, EMI, lightning, AC power disturbances, static discharge), and other telephony practices standard within the industry. Cable installers, electricians, and field technicians are expected to be properly trained and, if applicable, licensed in their trade practices. *Official Inter-Tel IVX500 certification is required for technical assistance.*

A. PRE-INSTALLATION CHECKLIST

6.2 To make installation easier, use this checklist when preparing to install the system.

Establish Suitable Environmental Conditions

6.3 Like the telephone system itself, the IVX500 System must be installed under suitable environmental conditions. Refer to the telephone system's installation manual for a complete list of conditions.

Assemble The Necessary Tools And Supplies

6.4 If the single-line card in the telephone system is already terminated on the MDF backboard, the only tools and supplies needed are:

- Industry-standard, two-pair (four-conductor) twisted cable.

- Four-conductor modular jack assemblies (one for every two IVX500 ports installed).

- Two-pair, non-reversing (straight-through), mod-to-mod line cords (one for every two IVX500 ports installed).

NOTE: To use standard two-pair "reversing" telephone line cord instead, tip and ring for both ports must be switched at the modular jack assembly.

- Standard telephone hand tools and the mounting hardware for the modular jack assemblies.
- IBM-compatible personal computer for on-site or stand-alone/remote system programming (refer to page 1-4 for specifications).
- Test set and digit grabber for troubleshooting system problems, if necessary.

6.5 If the single-line card in the telephone system is not terminated on the MDF backboard, the following items are also needed:

- Standard terminal block (66M1-50 type), bridging clips, and mounting hardware.
- Industry-standard, 25-pair cable for connecting the terminal block to the single-line card in the telephone system.
- 50-pin female amphenol-type connector (with recommended non-conducting, plastic cover) and a connecting machine.

Assemble The Optional Equipment

- PC wall-mount shelf (accommodates most PC models); refer to page 6-2 in REPLACEMENT PARTS.
- Parallel printer for producing various reports.
- ASCII-type programming terminal for diagnostics (and, if necessary, for loading voice prompts only).
- External modem for the IVX500 PC and internal or external modem for the programming PC.

B. HARDWARE INSTALLATION

NOTICE

Personal computer (PC) technology is continually evolving. As it does, the Inter-Tel IVX500 PC will continue to incorporate important design enhancements. Thus, depending on the actual version of equipment that is shipped, the following installation instructions could vary somewhat. If revised instructions are included with the equipment, refer to the new information instead.

6.6 Install the IVX500 PC as outlined in the following steps. See Figures 1-2 and 1-3 on pages 1-9 and 1-10 for sample diagrams of the assembled PC.

NOTE: Like the telephone system itself, the IVX500 PC *must* have its own isolated, dedicated, properly grounded AC circuit for proper operation. Refer to the telephone system's installation manual for details.

- (1) Ensure that the IVX500 PC's AC power switch is turned off and the AC power cord is unplugged.
- (2) *If the Audio Interface Card (AIC), Voice Processing Cards (VPCs), and Serial/Parallel Port Combination Card (SPC) are not already installed in the IVX500 PC, proceed with the installation as outlined in the following steps.*

If the AIC, VPCs, and SPC are already installed in the IVX500 PC, skip to step 8.

NOTE: Instead of a separate Serial/Parallel Port Combination Card, some PCs may have a Disk Controller Combination Card that is equipped with serial and parallel ports.

- (3) Remove the cover from the PC by removing the screws and sliding the cover off.
- (4) *If not already installed, install the Audio Interface Card (AIC) as follows (refer to Figure 1-6 on page 1-13):*

NOTE: The AIC should be installed in one of the last slots on the PC Motherboard (i.e., one of the slots furthest away from the PC's power supply). This goal is to leave four 16-bit (full-size) slots available for VPCs. (Refer to Figures 1-4 and 1-5 on pages 1-11 and 1-12 for sample card slot arrangements.)

- a. Remove the bracket that covers the opening to one of the last slots in the PC (i.e., one of the slots furthest away from the PC's power supply), and set the bracket and screw aside.

- b. Ensure that the AIC address selection DIP switches (S1) are set for address \$3E0. DIP switches 1 and 2 must be in the ON (closed) position and switches 3-6 must be in the OFF (open) position.
- c. Check to make sure that jumper straps are installed in the following locations on the AIC (see Figure 1-6 on page 1-13 for orientation):

JUMPER PINS	STRAP LOCATION
J3	Over top two pins (1 and 2)
J5	Over one pin only (or no strap)
J6	Over one pin only (or no strap)

- d. Holding the AIC near the PC Motherboard, disconnect the two-pin reset switch cable from the PC Motherboard and attach it to connector J1 on the AIC. (The other end of the cable should remain attached to the reset switch on the PC.)

NOTE: It may be necessary to unbundle the reset switch cable to allow it to reach the AIC.

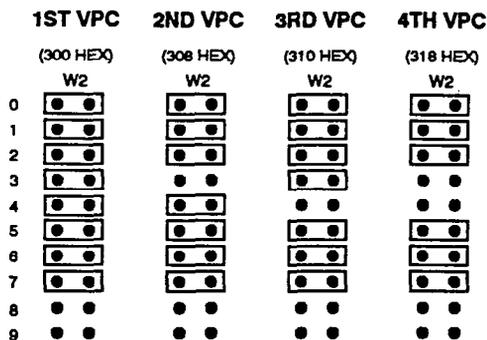
- e. Attach one end of the two-pin AIC-to-reset switch cable (supplied with the PC) to connector J2 on the AIC. Attach the other end of the cable to the PC Motherboard connector that was previously vacated in step 4d.

NOTE: Be sure that pin 1 marked on each end of the cable matches pin 1 on the AIC and the PC Motherboard. (If connected incorrectly, the PC will be reset continuously.)

- f. Insert the AIC in the appropriate PC slot and attach it to the chassis using the screw removed in step 4a. Make sure the card is securely attached to the PC Motherboard and does not touch any adjacent cards.

- (5) *If not already installed, install each of the up to four Voice Processing Cards (VPCs) as follows:*

- a. Remove the bracket that covers the opening to the appropriate 16-bit (full-size) slot as shown in Figure 1-4 or 1-5, and set the bracket and screw aside.
- b. Depending on which number VPC (1-4) is being installed, check to make sure that the address selection jumper straps are installed in the following locations on the VPC (see Figures 1-7 and 1-8 for orientation).



c. Insert the VPC in the appropriate slot and, if possible, attach it to the chassis using the screw removed in step 5a. Make sure the card is securely attached to the PC Motherboard and does not touch any adjacent cards.

(6) *If not already installed*, install the Serial/Parallel Port Combination Card (SPC) as outlined below (refer to Figure 1-9 on page 1-16 for a "sample" card):

NOTE: Instead of a separate Serial/Parallel Port Combination Card, some PCs may have a Disk Controller Combination Card that is equipped with serial and parallel ports.

a. Remove the brackets that cover the openings to two available 8-bit (half-size) slots, and set the brackets and screws aside.

b. Referring to the manufacturer's user manual, check to make sure that any jumper straps, DIP switches, etc. are installed in the appropriate locations on the card.

c. Referring to the manufacturer's user manual, ensure that the two sections of the SPC are properly connected together.

d. Insert the SPC in the appropriate slots and attach it to the chassis using the screws removed in step 6a. Make sure the card is securely attached to the PC Motherboard and does not touch any adjacent cards.

(7) Replace the cover on the PC and re-install the screws.

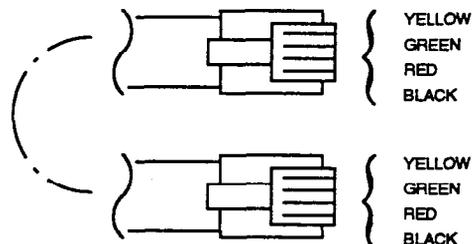
(8) To set up the audio interface between the telephone system and the IVX500 PC (see Figure 1-1 on the next page):

a. At the telephone system's MDF backboard, ensure that a single-line card with available circuits has been terminated on the *left* side of a station block. (Refer to the telephone system's installation manual for details.)

b. For every Voice Processing Card in the IVX500 PC, mount two four-conductor modular jack assemblies.

c. Referring to Figure 1-1 on the next page, attach the modular jack assemblies to the *right* side of the station block.

d. Plug one end of a two-pair, non-reversing (straight-through), mod-to-mod line cord into each modular jack assembly mounted in step 8b. A non-reversing line cord can be identified by examining the modular plug connectors side-by-side as shown below.



TWO-PAIR NON-REVERSING LINE CORD

NOTE: To use a standard two-pair "reversing" telephone line cord instead, tip and ring for both ports must be switched at the modular jack assembly.

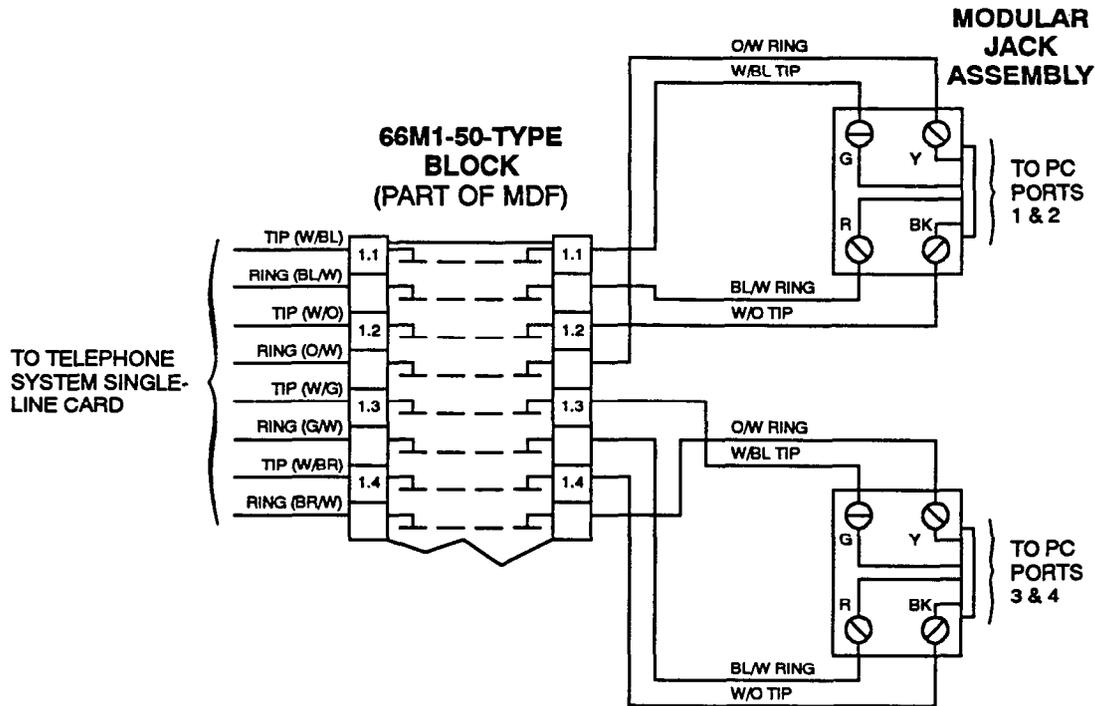
e. Plug the other end of each line cord into the appropriate jack on the corresponding Voice Processing Card in the IVX500 PC. (See paragraph 4.8 on page 1-3 for more information on the VPC jacks.)

(9) Connect the IVX500 PC's power cable according to the PC manufacturer's instructions and turn on the AC power switch.

NOTE: For optimal performance, the IVX500 PC is configured with turbo mode always enabled. Do *not* disable the turbo mode setting.

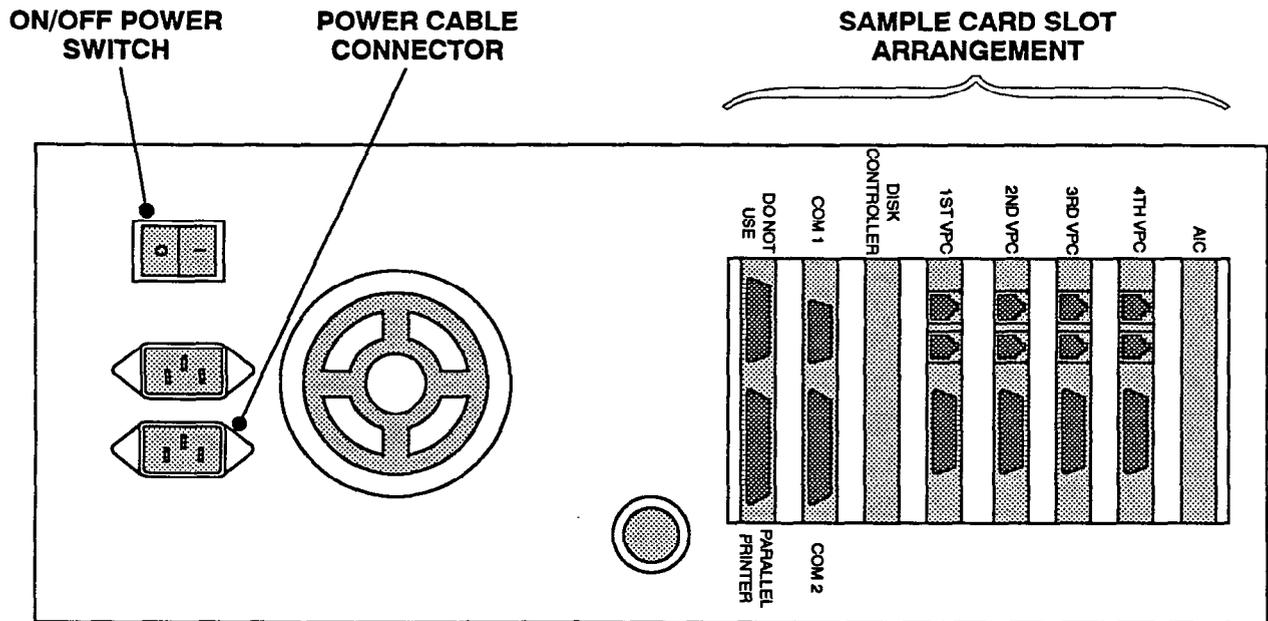
6.7 To connect a customer-provided programming PC to the IVX500 PC, refer to page 3-10 in PROGRAMMING.

FIGURE 1-1. IVX500 PC AND TELEPHONE SYSTEM INTERFACE



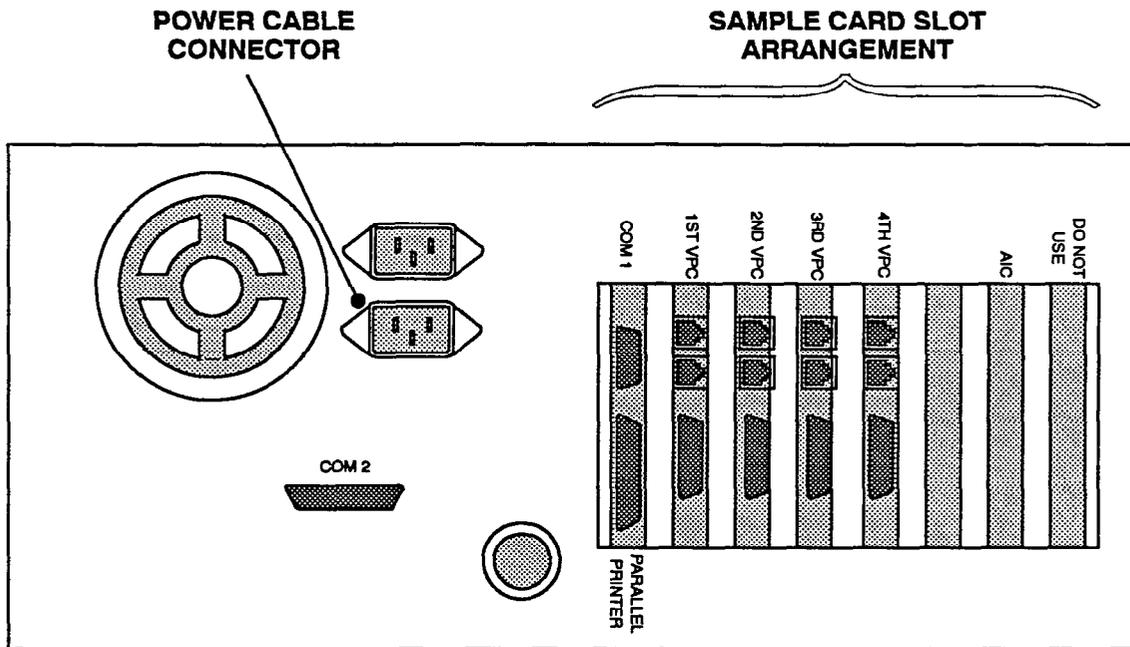
NOTE: Each modular jack assembly, as wired above, is connected to the IVX500 PC using a two-pair, non-reversing (straight-through), mod-to-mod line cord. To use a standard two-pair "reversing" telephone line cord instead, tip and ring for both ports must be switched at the modular jack assembly.

FIGURE 1-2. BACK OF ASSEMBLED IVX500 PC (SAMPLE #1)



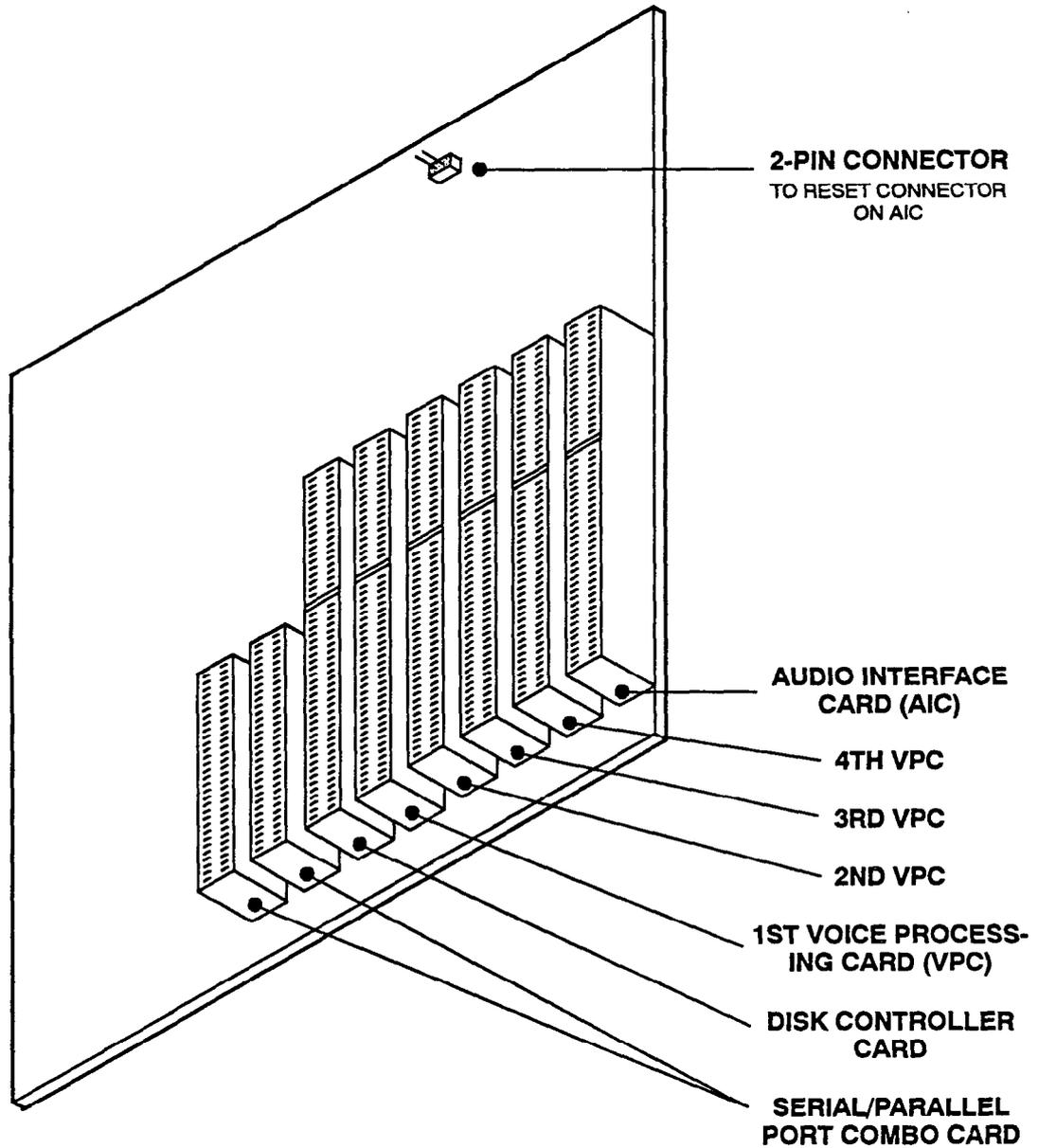
NOTE: Depending on the model of PC being used, the sample card slot arrangement and connector locations shown above could vary somewhat. See Figure 1-3 on the next page for another sample.

FIGURE 1-3. BACK OF ASSEMBLED IVX500 PC (SAMPLE #2)



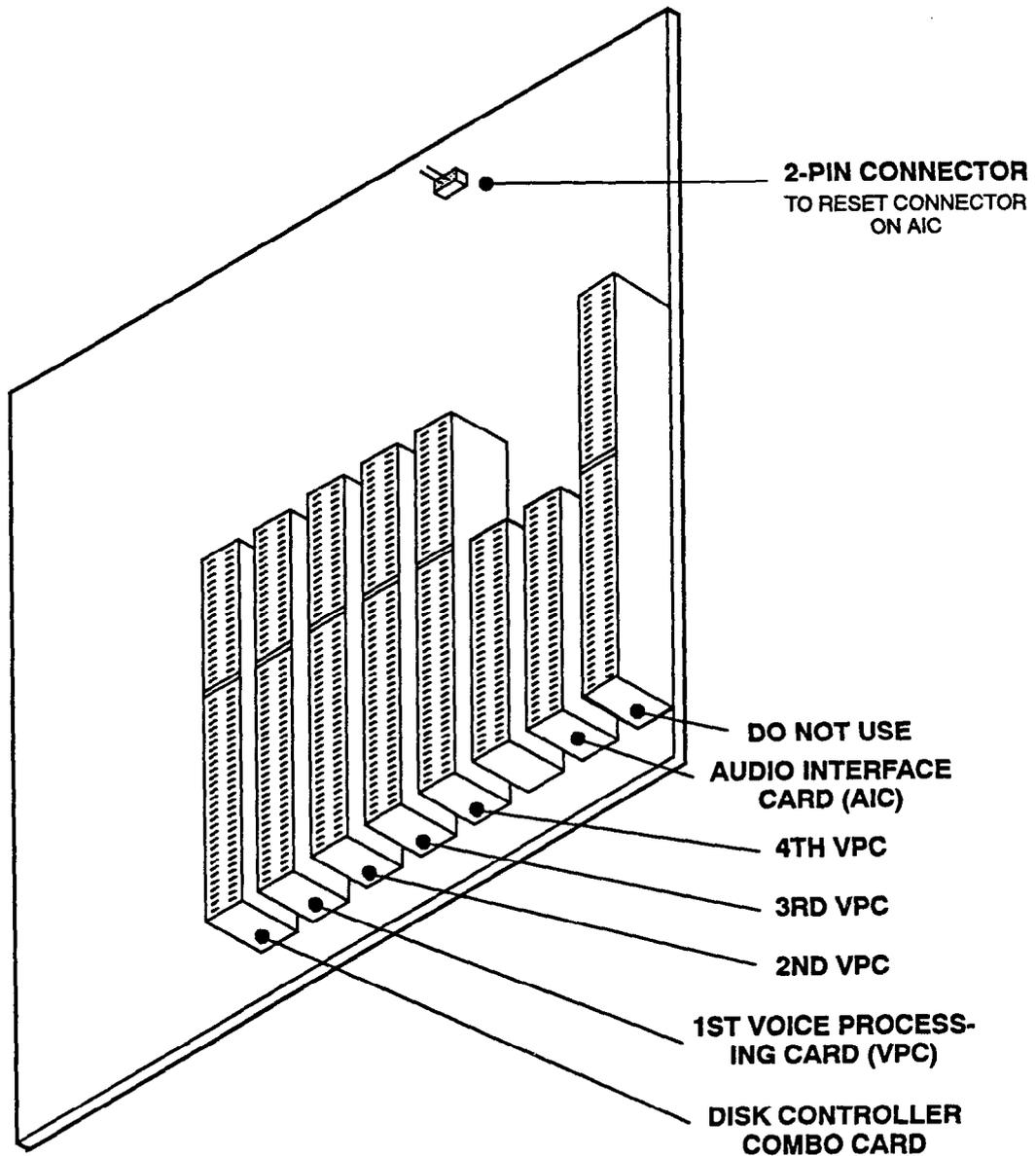
NOTE: Depending on the model of PC being used, the sample card slot arrangement and connector locations shown above could vary somewhat. See Figure 1-2 on the previous page for another sample.

FIGURE 1-4. PC MOTHERBOARD CARD SLOT ARRANGEMENT (SAMPLE #1)



NOTE: Depending on the model of PC Motherboard being used, the sample card slot arrangement and the location of the reset connector shown above could vary somewhat. See Figure 1-5 on the next page for another sample.

FIGURE 1-5. PC MOTHERBOARD CARD SLOT ARRANGEMENT (SAMPLE #2)



NOTE: Depending on the model of PC Motherboard being used, the sample card slot arrangement and the location of the reset connector shown above could vary somewhat. See Figure 1-4 on the previous page for another sample.

FIGURE 1-6. AUDIO INTERFACE CARD (AIC)

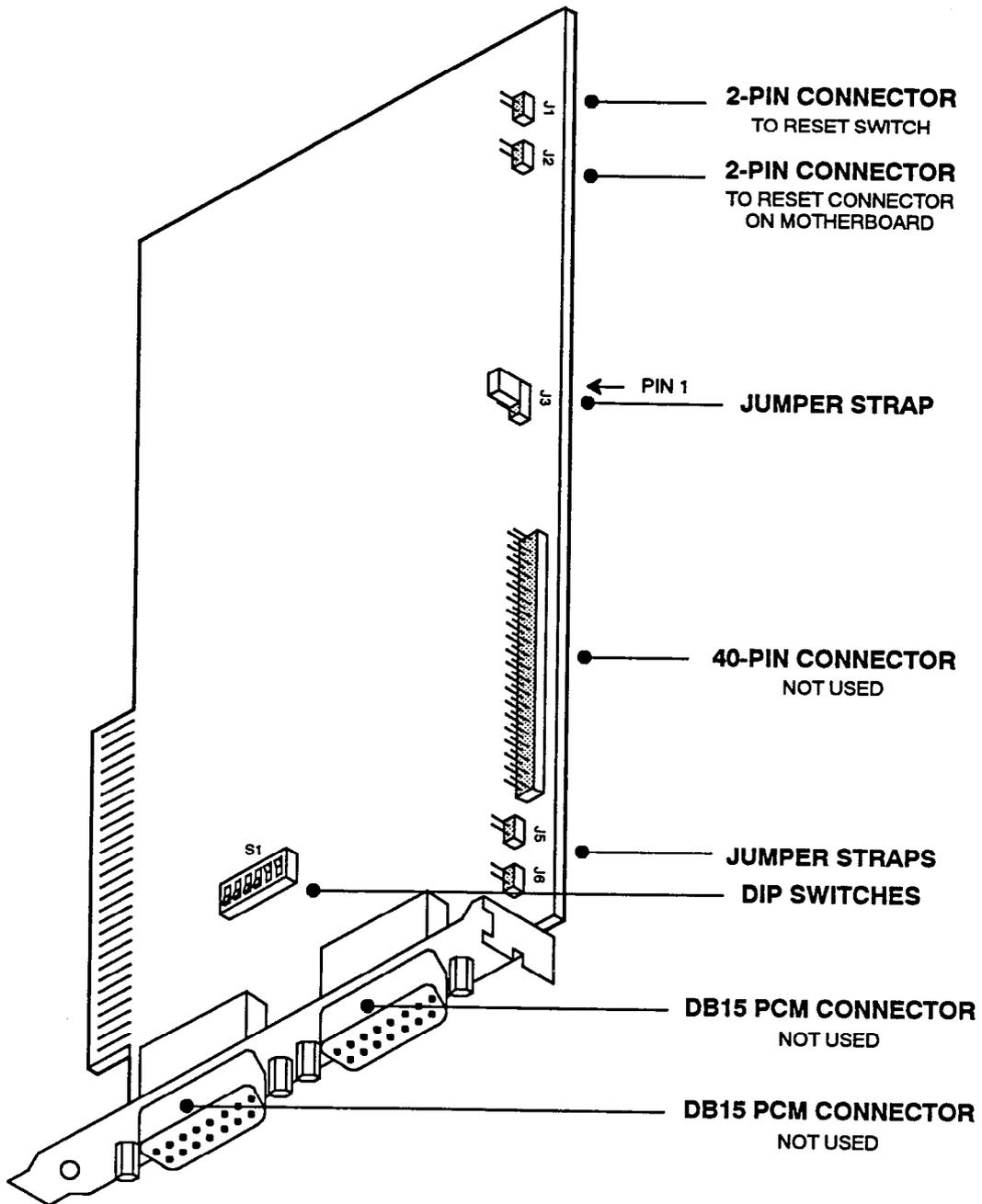


FIGURE 1-7. FOUR-PORT VOICE PROCESSING CARD (VPC)

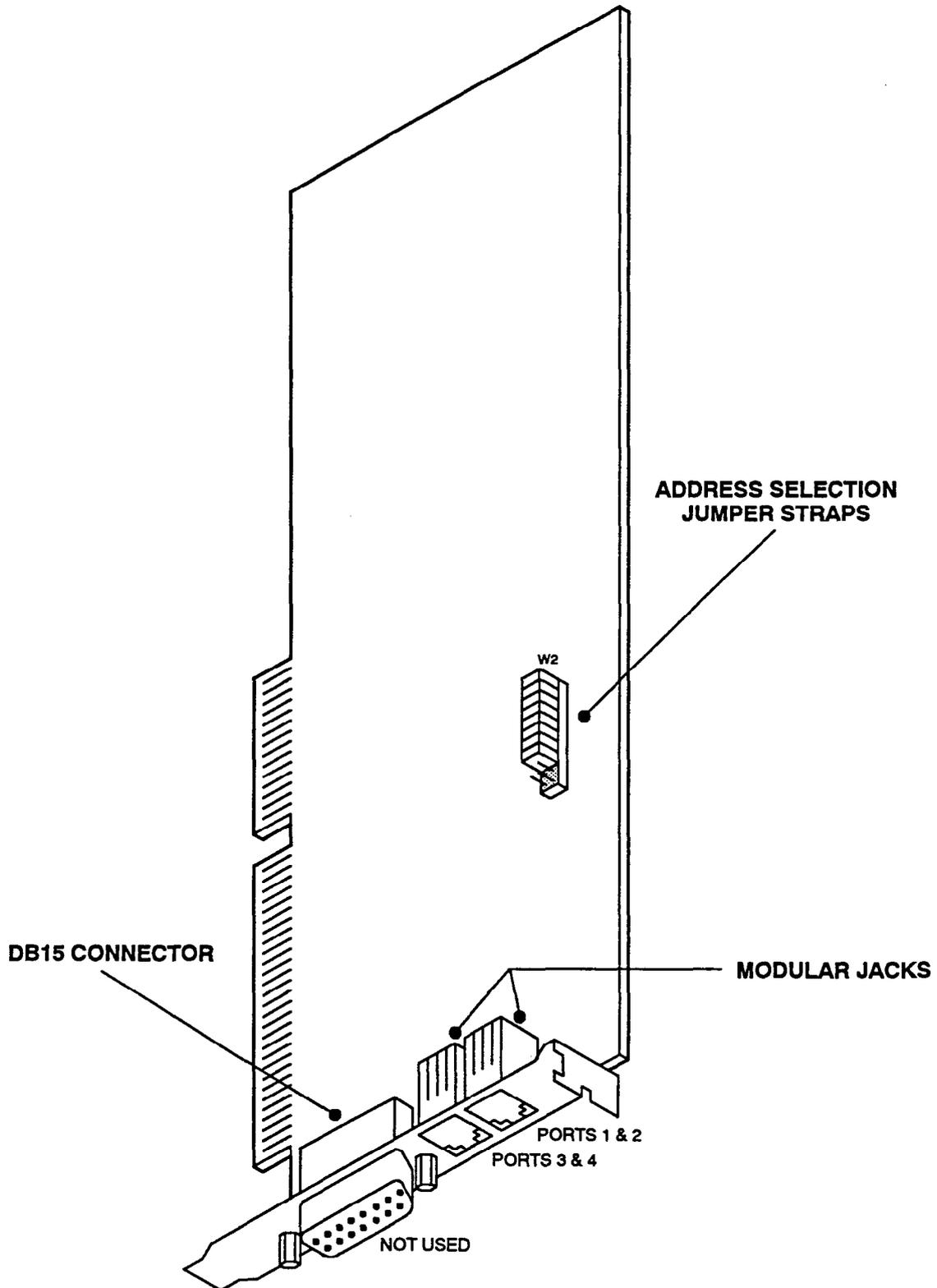


FIGURE 1-8. TWO-PORT VOICE PROCESSING CARD (VPC)

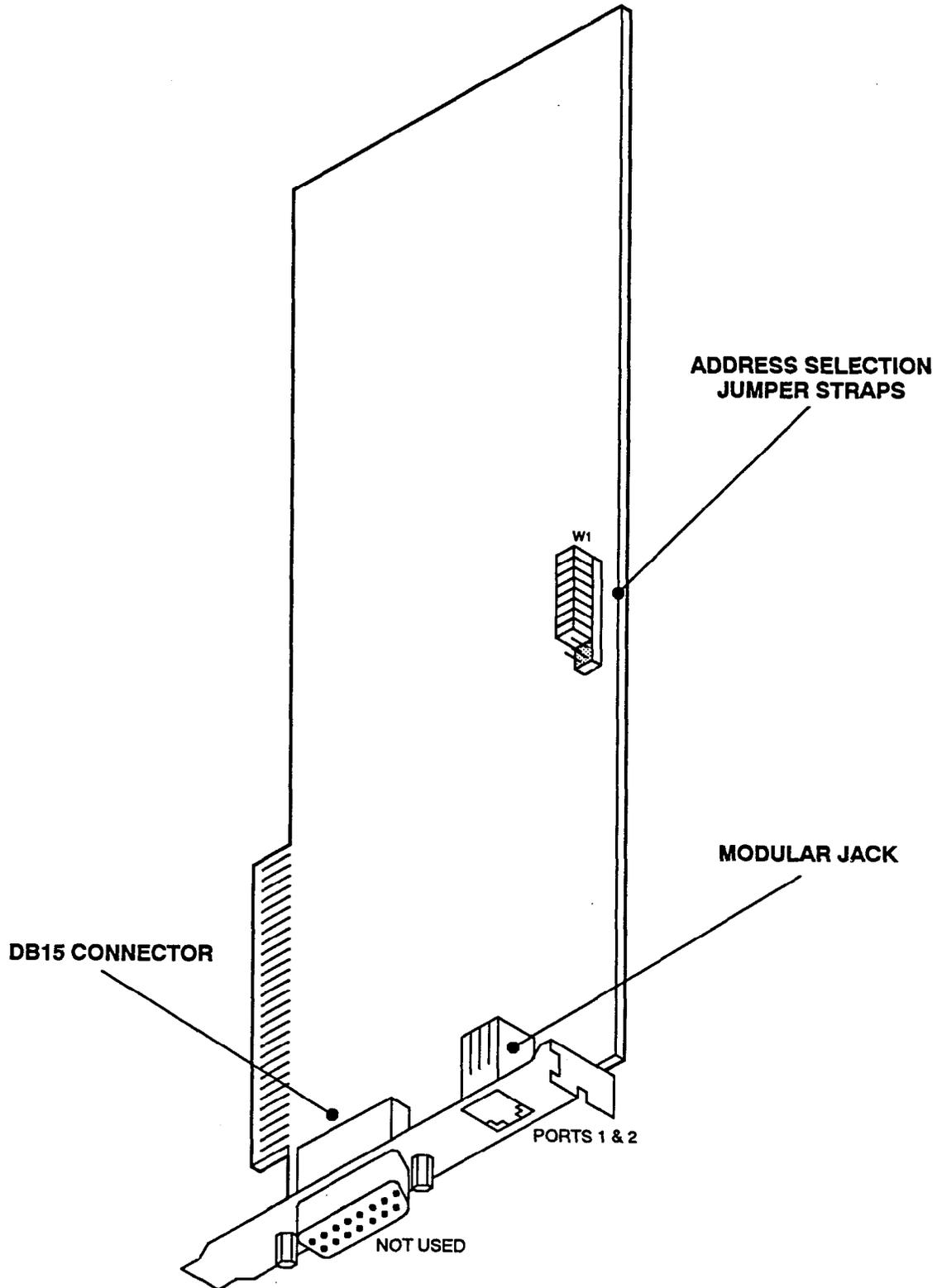
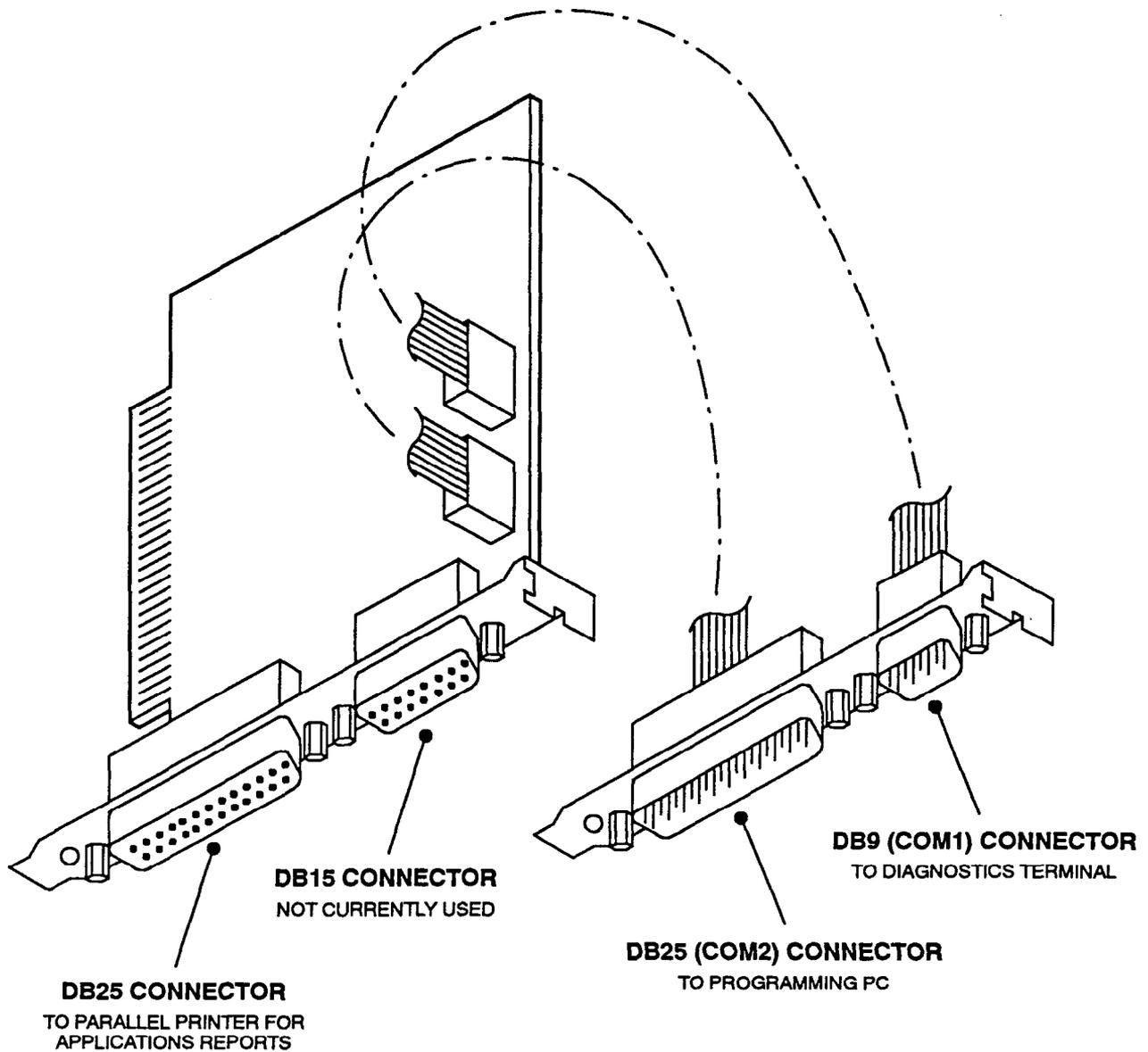


FIGURE 1-9. SERIAL/PARALLEL PORT COMBINATION CARD (SPC)



NOTE: Depending on the model of SPC being used, the location of the connectors and cables shown above could vary somewhat. Also, instead of a separate SPC (as shown above), some PCs may have a Disk Controller Combination Card that is equipped with serial and parallel ports (see Figure 1-3 on page 1-10).

C. SOFTWARE INSTALLATION

6.8 The IVX500 PC is shipped with the applications software already installed on the hard disk drive. As a back-up, 3½-inch floppy disks containing the software are also included. If the software is upgraded at a later time, a new set of software disks will be provided.

NOTE: To install the database programming software on the customer-provided programming PC, refer to page 3-9 in PROGRAMMING.

IVX500 Applications Software

6.9 If necessary, use the following procedure to install the applications software on the IVX500 PC's hard disk drive. (There is no need for a keyboard and monitor or a programming terminal.)

NOTE: To install the IVX500 applications software, the hard disk drive must be properly formatted and must have MS-DOS 6.2 installed. (If using a PC with equipment other than that specifically recommended, the system will not operate properly.)

- (1) Insert Applications Software Disk 1 of 4 in the IVX500 PC floppy disk drive.
- (2) Reboot the PC and wait for the files on the software disk to be copied onto the PC's hard disk. (When finished, the PC beeps twice every seven seconds to indicate it is ready for the second software disk.)
- (3) After the two beeps, remove the first software disk, insert Applications Software Disk 2 of 4, and wait for the files to be copied. (When finished, the PC beeps three times every seven seconds to indicate it is ready for the third disk.)

NOTE: If the wrong software disk is inserted, the PC beeps for 1.5 seconds, pauses for three seconds, and then beeps the appropriate number of times to indicate which software disk should be inserted.

- (4) After the three beeps, remove the second software disk, insert Applications Software Disk 3 of 4, and wait for the files to be copied. (When finished, the PC beeps four times every seven seconds to indicate it is ready for the fourth disk.)
- (5) After the four beeps, remove the third software disk, insert Applications Software Disk 4 of 4, and wait for the files to be copied. (When finished, the PC beeps for 1.5 seconds and then pauses for five seconds to indicate the installation is complete.)

- (6) After the installation is complete, remove the last software disk. (The PC automatically re-boots.)

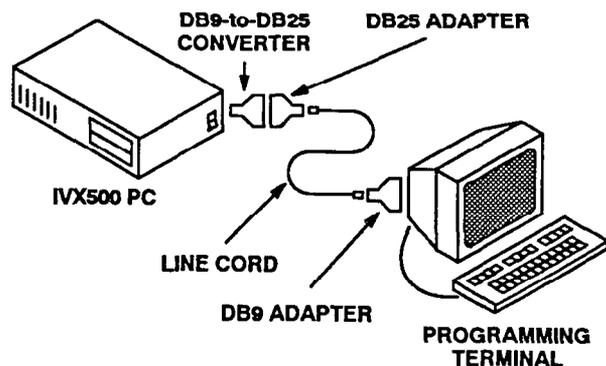
Voice Prompts

6.10 Should it become necessary to re-install the voice prompts only (e.g., because one or more of the prompts is garbled or incomplete), follow the procedure below.

- (1) Referring to the diagram below, attach the DB9-to-DB25 converter (supplied with the database programming cable kit) to the DB9 (COM1) serial port connector on the back of the PC.
- (2) Attach the DB25 modular adapter (supplied with the database programming cable kit) to the DB9-to-DB25 converter installed in step 1.
- (3) Attach the DB9 modular adapter (supplied with the database programming cable kit) to a customer-provided ASCII-type programming terminal configured with the following parameters:
 - The transmit and receive baud rate is 9600
 - The data format is 8 bit standard ASCII
 - Parity is off (ignored)
 - Communication is full duplex
 - There is one start bit and one stop bit

NOTE: If the terminal requires a DB25 connection, attach a straight-through DB9-to-DB25 converter to the DB9 modular adapter, or attach a customer-provided DB25 modular adapter.

- (4) Plug one end of the reversing mod-to-mod line cord (supplied with the database programming cable kit) into the DB25 modular adapter installed in step 2. Plug the other end of the line cord into the DB9 modular adapter installed in step 3.



- (5) Insert Applications Software Disk 2 of 4 in the floppy disk drive and reboot the PC. (The terminal displays "Delaying for 5 seconds. Press any key to abort.")
- (6) Before the five seconds expire, press ENTER (or any key on the keyboard) to abort. (The terminal displays the IVX500 applications directory prompt "C:\avdap>".)
- (7) Remove Applications Software Disk 2 of 4 and insert Applications Software Disk 1 of 4.
- (8) At the C:\avdap> prompt, type "cd \util" and press ENTER. (The terminal displays the utilities directory prompt "C:\util>".)
- (9) At the C:\util> prompt, type "pmtinst" and press ENTER. (The terminal displays the files being copied and the number of files copied.)
- (10) Follow the installation instructions displayed on the terminal.
- (11) After the installation is complete, remove the last software disk and disconnect the terminal. (The PC automatically reboots.)

7. IVX500 PC HARD DISK DRIVE REPLACEMENT

7.1 If necessary, the hard disk drive in the IVX500 PC can be replaced with a new drive as outlined below. The instructions are divided into four sections. Follow the steps outlined in each section.

7.2 To replace the hard disk drive, the following items are needed:

- Monitor and compatible monitor card
- Keyboard
- One set of applications software floppy disks (these disks are included with the IVX500 System)
- One set of MS-DOS 6.2 floppy disks (these disks are included with the IVX500 System)

A. REPLACING THE HARD DISK DRIVE

7.3 Remove the existing hard disk drive and replace it with the new hard disk drive, as described in the steps below.

- (1) Save the existing IVX500 database on properly formatted floppy disks. (For details, refer to page 3-67 in PROGRAMMING.)

NOTE: To save time and disk space, you may first want to have voice mail users delete all messages that do not need to be saved.

- (2) Turn off the PC's AC power switch and unplug the AC power cord.
- (3) Remove the cover from the PC by removing the screws and sliding the cover off.
- (4) Disconnect the cables on the back of the existing hard disk drive and remove it from its slot in the disk drive mounting shelf.
- (5) *If applicable:* Remove the frame extension brackets and the plastic slide rails from both sides of the existing hard disk drive and attach them to the new hard disk drive.
- (6) Attach the cables that were disconnected in step 4 to the back of the new hard disk drive.
- (7) While guiding the cables, carefully slide the new hard disk drive into the previously vacated slot in the disk drive mounting shelf until it locks into place.

B. CHECKING THE PC MOTHERBOARD SETUP

7.4 Check to see that the IVX500 PC motherboard is "set up" to work properly with the new hard disk drive, as outlined in the following steps.

NOTICE

Depending on the specific BIOS used by the PC Motherboard, the layout and editing functions of the setup screen could vary somewhat. If so, make any necessary changes by following the actual instructions displayed on the monitor, rather than those outlined in the following steps.

- (1) Install a customer-provided monitor card in an available card slot on the PC motherboard. On some systems, it may be necessary to temporarily remove an existing Voice Processing Card.
- (2) Connect a customer-provided monitor to the appropriate connector on the bottom edge of the monitor card. Then, plug in the monitor's AC power cord and turn on the monitor's AC power switch.
- (3) Connect a customer-provided keyboard to the keyboard connector on the back of the PC.
- (4) Plug in the PC's power cord and turn on the AC power switch. (The monitor displays the system memory check and then "Hit , if you want to run SETUP".)
- (5) Press the DEL key. (The monitor displays the main menu of options, as shown below.)

```
STANDARD CMOS SETUP
ADVANCED CMOS SETUP
ADVANCED CHIPSET SETUP
AUTO CONFIGURATION WITH BIOS DEFAULTS
AUTO CONFIGURATION WITH POWER-ON DEFAULTS
CHANGE PASSWORD
HARD DISK UTILITY
WRITE TO CMOS AND EXIT
DO NOT WRITE TO CMOS AND EXIT
```

- (6) Use the down arrow key to highlight the AUTO CONFIGURATION WITH POWER-ON DEFAULTS option and press the ENTER (or RETURN) key. (The monitor displays "Load Power-On Default Values from ROM Table (Y/N) ? N".)
- (7) Enter "y" (for yes) and press ENTER twice. (The monitor again displays the main menu of options.)
- (8) Use the up or down arrow keys to highlight the STANDARD CMOS SETUP option and press

ENTER *twice*. (The monitor displays the Standard CMOS Setup screen, a portion of which is shown below.)

```
Date (mn/date/year): xx/xx/xx
Time (hour/min/sec): xx:xx:xx
Hard Disk C: Type : xx
Hard Disk D: Type : Not Installed
Floppy Drive A: : 1.44MB, 3.5"
Floppy Drive B: : Not Installed
Primary Display : Not Installed
Keyboard : Not Installed
```

- (9) After setting the correct date and time, check to see that the Hard Disk C field is set to the proper type for the new drive that was just installed. *If it is not*, use the up or down arrow keys to highlight the Hard Disk C field, then use the PG UP or PG DN keys to change the setting to the proper type. Finally, enter the other hard drive data (cylinders, heads, etc.) as prompted.
- NOTE: All Inter-Tel hard disk drives have a label with the necessary setup information on it.
- (10) Ensure that the other fields are set as shown in the box above. *If not*, use the up or down arrow keys to highlight the desired field, then use the PG UP or PG DN keys to change the setting.
 - (11) Press the ESC key to exit. (The monitor again displays the main menu of options.)
 - (12) Use the up or down arrow keys to highlight the ADVANCED CMOS SETUP option and press ENTER *twice*. (The monitor displays the Advanced CMOS Setup screen. Depending on the specific BIOS and its defaults, the screen should appear similar to one of the following samples.)

Sample #1

```
Typematic Rate Programming : Disabled
Typematic Rate Delay (msec): 500
Typematic Rate (Chars/Sec) : 15
Above 1 MB Memory Test : Enabled
Memory Test Tick Sound : Enabled
Memory Parity Error Check : Enabled
Hit <DEL> Message Display : Enabled
Hard Disk Type 47 RAM Area : 0:300
Wait For <F1> If Any Error : Enabled
System Boot Up Num Lock : On
Weitek Processor : Absent
Floppy Drive Seek At Boot : Enabled
System Boot Up Sequence : A:, C:
Cache Memory : Disabled
Password Checking Option : Disabled
Video ROM Shadow C000,16K: Disabled
Video ROM Shadow C400,16K: Disabled
Adaptor ROM Shadow C800,16K: Disabled
```

```
Adaptor ROM Shadow CC00,16K: Disabled
Adaptor ROM Shadow D000,16K: Disabled
Adaptor ROM Shadow D400,16K: Disabled
Adaptor ROM Shadow D800,16K: Disabled
Adaptor ROM Shadow DC00,16K: Disabled
Adaptor ROM Shadow E000,64K: Disabled
System ROM Shadow F000,64K: Disabled
```

NOTE: Be sure to set the Above 1 MB Memory Test and Memory Parity Error Check fields to *Enabled*, the System Boot Up Sequence field to A:, C:, and the Cache Memory field to *Disabled*. If using this BIOS with a 486 motherboard, set the Cache Memory field to *Internal*.

Sample #2

```
Typematic Rate Programming : Disabled
Typematic Rate Delay (msec): 500
Typematic Rate (Chars/Sec) : 15
Hard Disk Type 47 RAM Area : 0:300
System Boot Up Num Lock : On
Weitek Processor : Absent
Floppy Drive Seek At Boot : Enabled
System Boot Up Sequence : A:, C:
External Cache Memory : Disabled
Password Checking Option : Disabled
Shadow RAM Option : Both
Main Memory Relocation : Enabled
```

NOTE: Be sure to set the System Boot Up Sequence field to A:, C: and the External Cache Memory field to *Disabled*.

Sample #3

```
Boot Up Numlock Status : On
Boot Up Floppy Seek : Enabled
Boot Sequence : A:, C:
Turbo SW Function Enable : Yes
External Cache : Disabled
CPU Internal Cache : Enabled
Security Option : Setup
Video BIOS Shadow : Disabled
C8000-CFFFF Shadow : Disabled
D0000-D7FFF Shadow : Disabled
D8000-DFFFF Shadow : Disabled
Virus Warning : Disabled
IDE HDD Block Mode : Disabled
Auto Configuration : Enabled
DRAM Speed : Fastest
Cache Write Cycle : 0 W/S
Cache Burst Read : 0 W/S
AT Bus Clock : 1/4 CLK
```

```
Internal Cache WB/WT : W/TROUGH
External Cache WB/WT : W/BACK
Video Shadow Cacheable : Disabled
System Shadow Cacheable : Disabled
Latch Local Bus : T3
```

NOTE: Be sure to set the Boot Sequence field to A:, C:, the External Cache field to *Disabled*, and the CPU Internal Cache field to *Enabled*.

- (13) Ensure that all of the fields are set similar to those shown in the preceding samples. *If not*, use the up or down arrow keys to highlight the desired field, then use the PG UP or PG DN keys to change the setting.
- (14) Press the ESC key to exit. (The monitor again displays the main menu of options.)
- (15) Use the up or down arrow keys to highlight the ADVANCED CHIPSET SETUP option and press ENTER twice. (The monitor displays the Advanced CMOS Setup screen. Depending on the specific BIOS and its defaults, the screen should appear similar to the following sample.)

Sample

Auto-Configuration	:	Enabled
DMA Address/Data Hold Time	:	1-2 T
AT BUS Clock Select	:	CPUCLK/6
I/O Recovery Time Delay	:	4 BCLK
Cache Read Hit Burst	:	3-2-2-2
Cache Write Hit Wait State	:	2WS
DRAM Page Mode	:	Disabled
DRAM Read Wait State	:	2WS
DRAM Write Wait State	:	3WS
Memory Remapping	:	Enabled
Memory above 16MB Cacheable:	No	
C0000-C3FFF, 16K Cacheable	:	No
C4000-C7FFF, 16K Cacheable	:	No
C8000-CBFFF, 16K Cacheable	:	No
CC000-CFFFF, 16K Cacheable	:	No
D0000-D3FFF, 16K Cacheable	:	No
D4000-D7FFF, 16K Cacheable	:	No
D8000-DBFFF, 16K Cacheable	:	No
DC000-DFFFF, 16K Cacheable	:	No
E0000-EFFFF, 64K Cacheable	:	No
F0000-FFFFF, 64K Cacheable	:	No
Non-Cacheable Block1 Enable:	Disabled	
Non-Cacheable Block-1 Size	:	1MB
Non-Cacheable Block-1 Base	:	0KB
Non-Cacheable Block2 Enable:	Disabled	
Non-Cacheable Block-2 Size	:	16MB
Non-Cacheable Block-2 Base	:	0KB
Co-processor Ready# Delay	:	Enabled
RAS Time Out	:	Disabled
DMA CAS Timing Delay	:	Disabled
DMA Clock Select	:	SCLK/2

NOTE: Be sure to set the Memory Remapping field to *Enabled*.

- (16) Ensure that all of the fields are set similar to those shown in the sample above. *If not*, use the up or down arrow keys to highlight the desired field, then use the PG UP or PG DN keys to change the setting.
- (17) Press the ESC key to exit. (The monitor again displays the main menu of options.)

- (18) Use the down arrow key to highlight the WRITE TO CMOS AND EXIT option and press ENTER. (The monitor displays: "Write to CMOS and exit (Y/N)? N")
- (19) Enter "y" (for yes) and press ENTER. (The monitor again displays the system memory check.)
- (20) *If the new hard disk drive already has some type of DOS installed*, the monitor eventually displays the C drive programming prompt "C:\>". Format the hard disk drive and re-install MS-DOS as outlined in the following section.

If the new hard disk drive is blank, the monitor eventually displays "Insert BOOT diskette in A: Press any key when ready". Insert the MS-DOS 6.2 Setup Disk into the floppy disk drive and follow the instructions displayed on the monitor to set up and install MS-DOS. Then skip over the next section and proceed directly to Installing the Software.

NOTE: When installing MS-DOS 6.2, *do not* use the DoubleSpace or MemMaker utilities.

C. FORMATTING THE HARD DISK DRIVE AND INSTALLING MS-DOS

7.5 After setting up the PC motherboard, format the disk and install MS-DOS using the following procedure.

CAUTION: *Formatting the hard disk drive erases all information stored on the drive. DO NOT format the hard disk drive unless instructed to do so by authorized personnel.*

- (1) Insert the MS-DOS 6.2 Setup Disk into the floppy disk drive.
- (2) At the C:\> prompt, enter "a:" and press ENTER. (The monitor displays the A drive programming prompt "A:\>".)
- (3) At the A:\> prompt, enter "format c:/s" and press ENTER. (The monitor displays "WARNING: ALL DATA ON NON-REMOVABLE DISK DRIVE C: WILL BE LOST! Proceed with Format (Y/N)?")
- (4) Enter "y" (for yes) and press ENTER. (The formatting process for drive C begins and continues for several minutes. After the formatting is complete, the monitor displays a format complete message and asks for a volume label.)
- (5) Type in a volume label (if desired) and press ENTER. (The monitor displays some disk usage information and then the A drive programming prompt "A:\>".)

- (6) If there are any other drives to format, repeat steps 3 through 5 using the appropriate "format drive:" command (e.g., "format d:").
- (7) At the A:\> prompt (and with the MS-DOS 6.2 Setup Disk still in the floppy disk drive), press the CTRL, ALT, and DEL keys all at the same time to restart the system.
- (8) Follow the instructions displayed on the monitor to set up and install MS-DOS.

NOTE: When installing MS-DOS 6.2, *do not* use the DoubleSpace or MemMaker utilities.

D. INSTALLING THE SOFTWARE

7.6 After formatting the hard disk drive and installing MS-DOS, re-install the applications software and restore the database, as outlined in the following steps.

- (1) Turn off the PC's AC power switch and unplug the AC power cord.
- (2) Turn off the monitor's AC power switch, unplug the monitor, and disconnect it from the monitor card.

- (3) Remove the monitor card from its slot on the PC motherboard. If a VPC was removed to make room for the monitor card, replace the VPC.
- (4) Disconnect the keyboard from the connector on the back of the PC, replace the cover on the PC, and re-install the screws.
- (5) Insert Applications Software Disk 1 in the PC's floppy disk drive.
- (6) Plug in the PC's power cord and turn on the AC power switch.
- (7) Install the IVX500 applications software. (For details, see page 1-17.)
- (8) Restore the saved database from step 1 on page 1-19. (For details, see page 3-67 in PROGRAMMING.)
- (9) After the restore is complete and the system resets, check the database programming to ensure that the system database has been successfully restored.

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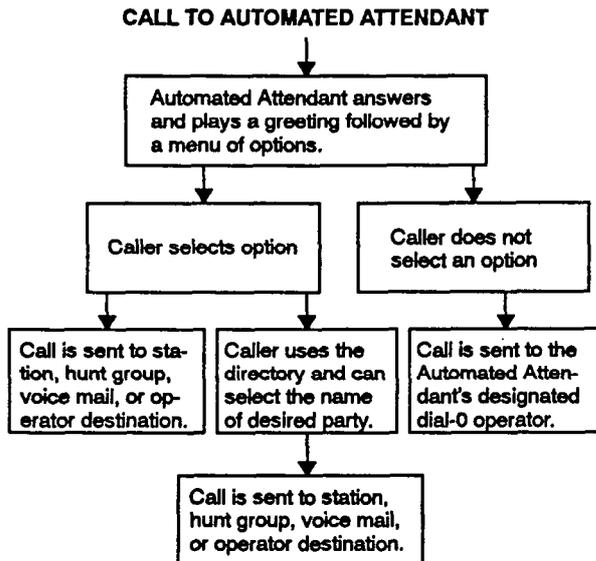
1. INTRODUCTION

1.1 The Inter-Tel IVX500 System can contain up to 25 of the following applications. (Each application is described in detail in this chapter.)

- **Automated Attendant:** The automated attendant is a programmable feature that can be used to provide automated call answering service. Calls can transfer, forward, or directly ring in to an automated attendant. When an automated attendant answers a call, it plays a recording that gives dialing instructions. After hearing the recording (or while it is playing), the caller may dial an extension or mailbox number.
- **Automated Attendant Recall Destination:** If a call that is transferred by the automated attendant recalls, it is sent to the Automated Attendant Recall Destination for the port that transferred the call. The Recall Destination recording announces that the station is unavailable and allows the caller to leave a voice mail message or dial another extension.
- **Call Routing Announcements:** A Call Routing application can be used as a playback device. This is useful for programming hunt group announcement and overflow stations. When accessed, the Call Routing Announcement application will play a recording and then hang up. Or, the Call Routing Announcement can be programmed to use Digit Translation, a feature that allows one-key access to extensions, mailboxes, applications, etc.
- **Quick Message Retrieval:** Only one Quick Message Retrieval application may be created for the system. It is usually programmed as the alternate message source for the Non-Subscriber Voice Mail ports. If so, when station users respond to message indications left by the voice mail ports, they are prompted only for their password.
- **Non-Subscriber Voice Mail:** This application handles all calls that are directed to voice mail (other than Quick Message Retrieval) placed by subscribers and non-subscribers. Callers will hear the main company greeting, followed by a menu of available options. In telephone systems with voice computer hunt groups, internal callers will hear only the menu of options, and not the company greeting. Stations can forward or transfer calls directly to their mailbox using this application's extension number. This application can also be the message center for the subscribers' stations.

2. AUTOMATED ATTENDANT

2.1 The automated attendant is a programmable feature that can be used to provide automated call answering service. Calls can transfer, forward, or directly ring in to an automated attendant. Calls to the automated attendant application are processed as follows.



2.2 When an automated attendant answers a call, it plays a recording that gives dialing instructions. During or after the recording, the caller may then directly dial a station extension number, voice mail access number (if there is no associated mailbox), or hunt group pilot number. Or, the caller may use the directory to look up the desired extension.

2.3 When the automated attendant answers an outside call, the caller will hear the company greeting, followed by instructions and a the list of available options. Intercom callers hear only the operating instructions and menu of options. The caller then has the following options:

- **Dial a station extension number:** If an extension number is dialed that has a mailbox or extension ID, the call is transferred to that station.
- **Dial a hunt group pilot number:** When a pilot number is dialed, the call is transferred to the selected hunt group. The call rings or circulates according to the hunt group's programmed distribution type (all ring, linear, or distributed).
- **Dial the Non-Subscriber Voice Mail application's extension number:** The caller can reach the Voice Mail main greeting by dialing the extension number

assigned to the Voice Mail application. (The Voice Mail application must also have an extension ID programmed for it.) The caller can then leave a message as a non-subscriber or access any of the voice mail subscriber features. (See page 2-7 for Voice Mail information.)

- **Use the directory:** If the caller does not know the extension or mailbox number of the desired party, he or she can spell the name using the keypad keys and "look up" the number in the directory. (This option can be disabled in the database. Or, if there are no names recorded for the individual mailboxes or for the system's extension IDs, this option will not be provided.) Refer to page 2-20 for directory information.
- **Dial the operator access destination:** If the caller needs further assistance, dialing 0 will access the IVX500 System's programmed operator destination. Or, if the caller is on a rotary telephone and cannot enter a digit, the call will be automatically transferred to the operator destination. (The operator access destination is programmed as described on page 3-63. There can be separate destinations for day and night modes.)

NOTE: Due to the natural characteristics of the trunk, the volume level of DTMF tones transmitted over the trunk may be substantially reduced before reaching the telephone and voice mail systems. This natural degradation in tone volume may adversely affect the reliability of the Automated Attendant feature. Other factors which can affect automated attendant performance are trunk noise and the quality and strength of the DTMF tones generated by the off-premises phone itself.

A. AUTOMATED ATTENDANT APPLICATIONS

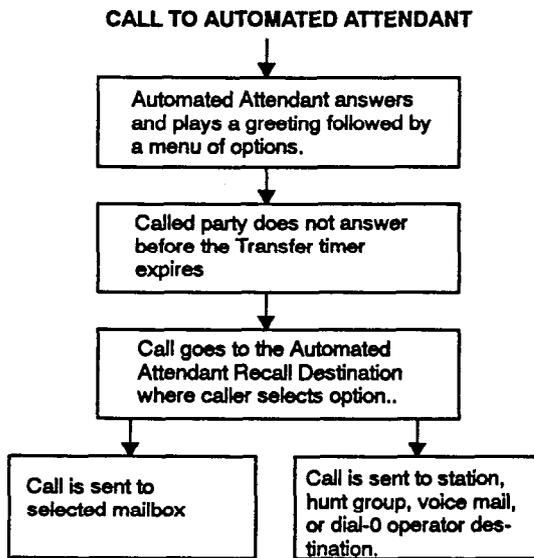
2.4 There are a number of different uses for this feature. Here are two examples:

- Direct ring-in calls to a busy attendant could be forwarded to an automated attendant (using the Secretarial Intercept, Call Forward If Busy or System Forwarding features of the telephone system).
- The Automated Attendant's extension number can be programmed in the telephone system to receive direct ring-in calls when the system is in day and/or night mode.

2.5 To create an Automated Attendant application, follow the instructions on page 4-5 in the APPLICATION AND TELEPHONE SYSTEM SETUP section.

B. AUTOMATED ATTENDANT RECALL DESTINATION

2.6 When a station receives a call that has been routed through the automated attendant, the call is handled by the telephone system as a transferred call. If the call is not answered before the appropriate Transfer timer expires, the call recalls the automated attendant's recall destination. The recall destination is usually the Automated Attendant Recall Destination application which announces that the called station is unavailable and allows the caller to choose to leave a message or dial another extension number.



2.7 If the Recall Destination fails to answer a call, it is automatically sent to the recall destination's programmed attendant.

2.8 If an invalid number is dialed, the caller is prompted to enter another number.

2.9 To create an Automated Attendant Recall Destination application, follow the instructions on page 4-6 in the APPLICATION AND TELEPHONE SYSTEM SETUP section.

C. AUTOMATED ATTENDANT CUSTOM RECORDINGS

2.10 Custom recordings are made using the System Administrator's mailbox as described on page 2-18. Each recording is associated with a recording number and assigned to the application(s) in database programming or using the System Administrator's mailbox. (Re-

fer to page 2-19 in this section and pages 3-21 and 3-48 in PROGRAMMING.)

D. EXTENSION ID

2.11 Extension IDs are used for transferring calls through the Automated Attendant or using the Automated Attendant Directory. An extension ID allows callers to be transferred to extension numbers (stations, hunt groups, and applications) that do not have mailboxes. It also allows the extension number to have a recorded name in the directory. This feature is set up and initialized using database programming and Voice Mail features.

2.12 If an Extension ID has been created in database programming for a telephone system extension number, either the principal user of the extension number or the System Administrator must set up (initialize) the ID with a password and record a name for use in the Extension Directory. At default the extension ID password is the same as the extension number. If the Extension ID has not been "initialized" calls can still be transferred to the associated extension number. However, they cannot be selected from the directory. If the Extension ID's user name has not been recorded it cannot be heard when callers use the Automated Attendant Directory. The name must be recorded in order to fully initialize the Extension ID. See page 2-11 for more information on initializing Extension IDs.

2.13 Once the extension ID is initialized, the extension user may access Extension ID Options which allows the directory name and password to be modified.

2.14 If an Extension ID has not been created for an extension which is equipped on the telephone system, callers using the automated attendant cannot be transferred to that destination. Instead, these callers will receive a system recording notifying them of an invalid entry and are routed back to the automated attendant's main menu.

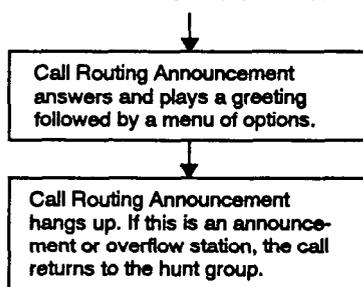
2.15 Individual extension IDs can be programmed as "Private" in database programming. A Private number is included in the directory and can be dialed if the caller knows the number, but the extension number information is not available to the caller; only the name is played.

2.16 Extension IDs can also be programmed as "Unlisted." That means that the number will not be included in the directory, but can be dialed if the caller knows the extension number.

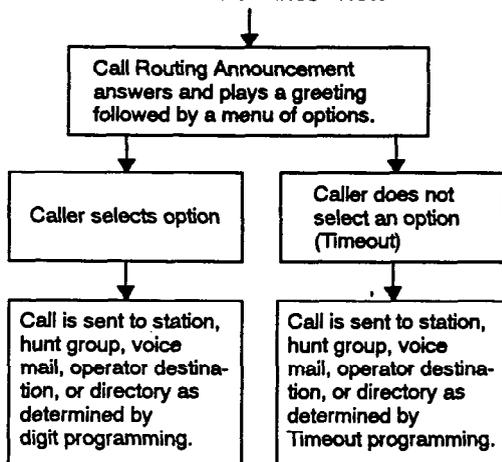
3. CALL ROUTING ANNOUNCEMENT

3.1 The Call Routing Announcement application can be used as a playback device that plays a message and then hangs up to disconnect the call. This is especially useful for programming hunt group announcement and overflow stations. As an option, the Call Routing Announcement application can use digit translation which allows the caller to press a single digit for access to the directory, subscriber voice mail, a station, a hunt group, the operator extension, or a mailbox.

CALL TO CALL ROUTING ANNOUNCEMENT WITHOUT DIGIT TRANSLATION



CALL TO CALL ROUTING ANNOUNCEMENT WITH DIGIT TRANSLATION



A. CUSTOM RECORDINGS

3.2 When accessed, the Call Routing Announcement application will play a custom recording and then hang up.

3.3 Call routing announcements are recorded using the System Administrator's mailbox as described on page 2-18. Each announcement is assigned to use a "custom greeting" number in database programming. (Refer to page 3-48 in PROGRAMMING.)

B. DIGIT TRANSLATION

3.4 Digit translation allows callers to dial a single digit to access the directory; subscriber voice mail; or a designated extension number, mailbox, or hunt group pilot number. Up to 12 digit translation storage locations (0-9, *, and #) are available for each Call Routing Announcement application (refer to PROGRAMMING, page 3-21).

3.5 To use digit translation, the Call Routing Announcement application must have special programming. Digit translation is programmed by assigning specific "Actions" for each digit and determining what will happen if the caller does not enter a digit (Timeout). The length of time the application will wait for input from the caller (0-60 seconds) is also programmable.

- The Actions that can be selected for digits *, #, and 0-9, and for Timeout are:

- *Transfer To Operator*: This action transfers the call to the Dial-0 Destination that is programmed in the System Maintenance window shown on page 3-63.
- *Company Directory - First Name*: This sends the caller to the directory prompt that asks the caller to enter the first name of the desired party.
- *Company Directory - Last Name*: This sends the caller to the directory prompt that asks the caller to enter the last name of the desired party.
- *Subscriber Access*: This sends the caller to the mailbox prompt that requests a mailbox number.
- *Invalid*: The digit will not be used. Callers who press this digit hear a recording that tells them that it is invalid.
- *Transfer To Extension*: This action sends the call to a designated extension (station, hunt group, or application).
- *Transfer To Mailbox*: This sends the call to a designated mailbox.
- *Transfer To Collected Extension*: To allow callers to dial extension numbers of stations and hunt groups that have a mailbox or extension ID, use this Action for digits that correspond to the first digits of extension numbers. For example, if digit 1 is "Transfer To Collected Extension," callers can dial extension numbers that begin with 1. However, if digit 1 is "Transfer to extension 200," a caller attempting to dial a station extension number that begins with 1 will instead be transferred to 200.
- *Hang Up*: This action disconnects from the call if the user does not enter a digit.

3.6 After the application is created and programmed, the System Administrator's mailbox is used to make a custom recording that explains the options to callers, as described on page 2-18. The custom recording is assigned to the Call Routing Announcement application as described on page 3-21. A caller who listens to the Call Routing Announcement recording can then dial the single-digit location number to reach the designated destination. For example, if the hunt group extension for a customer support group is programmed for digit 3, the

recording should say something like, "Dial 3 for customer support."

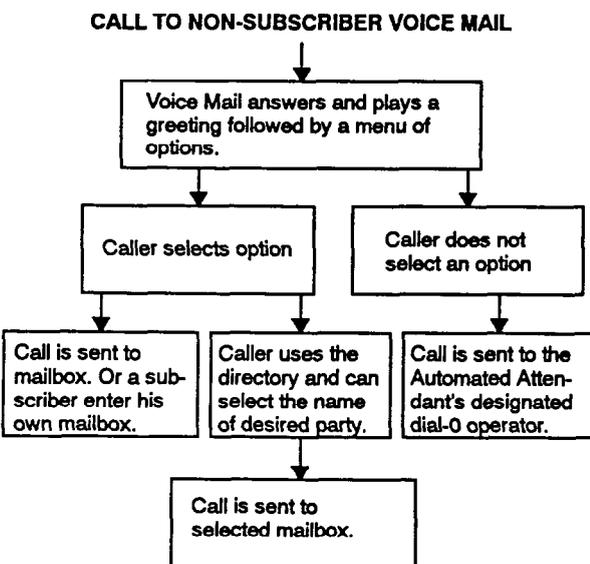
NOTE: Digit translation is not recommended when the application will be used as a hunt group announcement or overflow station on telephone systems in which the hunt group calls can be pulled away from the announcement/overflow station when a hunt group member becomes available. For an alternate method of using digit translation in hunt groups, refer to the manual for your telephone system.

4. VOICE MAIL

4.1 The Voice Mail feature allows callers to send and receive recorded messages from any station or DTMF telephone. (Dial-pulse signaling is not recognized by the IVX500 System. Callers using dial-pulse phones will be routed to the IVX500 System Operator Access Destination for assistance.)

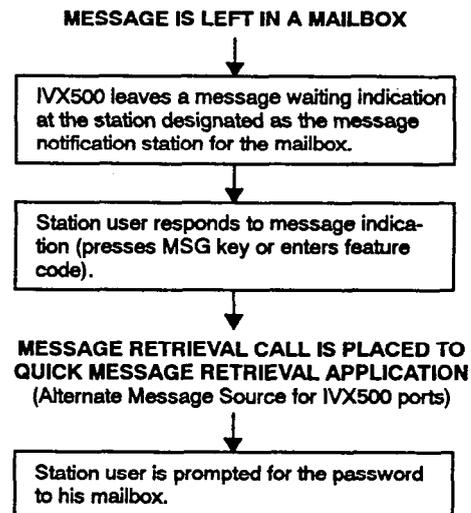
4.2 Two types of applications are combined to provide the Voice Mail feature: Non-Subscriber Voice Mail and Quick Message Retrieval.

- **Non-Subscriber Voice Mail:** This application handles all calls that are directed to voice mail (other than to the Quick Message Retrieval application) placed by subscribers and non-subscribers. Callers will hear the main company greeting, followed by a menu of available options. In telephone systems with voice computer hunt groups, internal callers will hear only the menu of options, and not the company greeting. Stations can forward or transfer calls directly to their mailbox using this application's extension number. This application can also be the message center for the subscribers' stations.



- **Quick Message Retrieval:** Only one Quick Message Retrieval application may be created for the system. It is usually programmed as the alternate

message source for the Non-Subscriber Voice Mail ports. If so, when station users to respond to message indications left by the voice mail ports, they are prompted only for their password.



4.3 Station users and outside callers gain access to the Voice Mail application in the following ways:

- By dialing the telephone number or extension number assigned to the Non-Subscriber Voice Mail application
- By being transferred to the Non-Subscriber Voice Mail application by the automated attendant
- By being forwarded to the Non-Subscriber Voice Mail application when a called station is unavailable
- By responding to message waiting indications and reaching the Quick Message Retrieval application

4.4 All Voice Mail users hear recorded instructions that tell them what to do next. Users simply listen to the prompts and press the keypad key that corresponds to the desired choice. If the user does not respond immediately, a second set of prompts is played.

4.5 Most prompts are interruptible, and users can press the desired key at any time during the prompt. The prompt will then stop and the system will act on the requested choice.

A. MAILBOXES

4.6 A mailbox is a storage location on the IVX500 PC hard disk which stores all messages that have been directed to it. (The hard disk also stores prompts, greetings, and special programming.) Each "Subscriber" (voice mailbox owner) has assigned a unique mailbox number and password. At system default the passwords are the same as the mailbox numbers. (For example, the default password for mailbox 101 is "101.")

4.7 There are three types of mailboxes on the voice mail system: Standard, Receive-Only and System Administrator. There can also be Extension IDs which are stations that do not have mailboxes, but that are included in the recorded directory.

- Standard mailbox features include, listening to new messages, recording, sending messages, deleting messages, and saving messages, and personal options. Optionally, if authorized through database programming, a subscriber's options may include Remote Messaging.
- A Receive-Only mailbox type is restricted from recording and sending messages. This type of mailbox has no access to Remote Messaging and may only listen to new messages, save or delete them and access Personal Options.
- The System Administrator has all of the options a Standard mailbox subscriber has. However, additional feature options include: the ability to record and send broadcast messages to all subscribers of the voice mail system, provide mailbox and group list maintenance, and record and select Custom Recordings.

- Extension IDs are used in conjunction with transferring calls through the Automated Attendant or using the Extension Directory. The extension ID allows callers to be transferred to station extensions which do not have mailboxes and allows the station user to record a directory name and set up a password.

4.8 Multiple mailboxes and extension IDs may be created. However, there can be only one System Administrator. There can be up to 500 total mailboxes (any type) and/or extension IDs in the voice mail system. (If a mailbox is created for an extension with an extension ID number, the extension ID number is replaced with the mailbox.)

B. GROUP LISTS

4.9 Group lists are programmed in the database (see page 3-31). They are lists of mailboxes that can be used by any Subscriber for sending messages to several mailboxes simultaneously. The information that is programmed for group lists include the following:

- Group list description
- Group list number
- Mailboxes included in the list

4.10 Group Lists are not included in the Automated Attendant or Voice Mail of directories.

4.11 The System Administrator can record the name for a group list.

4.12 Instructions for using group lists are given on page 2-13.

C. INTERNAL MESSAGE NOTIFICATION

Message Notification Station

4.13 Each mailbox has a programmed Message Notification Station. This is usually the extension number that matches the mailbox number (associated mailbox). However, a different number can be used for the mailbox's message notification station (non-associated mailbox). By default, the Message Notification Station number is the same as the mailbox number, even if a corresponding extension number does not exist.

- **Associated:** When the extension number, message notification number, and mailbox number for a station are all programmed to match and the mailbox is marked in the database as "associated," the associated station user can forward calls to voice mail and have the call go directly to that mailbox's personal greeting. (Even if other mailboxes use that extension number as their message notification extension.)
- **Non-Associated:** Non-associated mailboxes have a message notification station assignment that is an extension number that does not match the mailbox number. (For example, a hunt group pilot number can have a mailbox, but the message notification must be sent to a specific station so that a message lamp can be lit or message notification signal can be sent.) If a station user's extension number does not match a mailbox number, and the station user forwards calls to voice mail, the caller will hear the main voice mail greeting and must enter a mailbox number.

NOTE: If there are non-associated mailboxes in the IVX500 System, the telephone system must have the Validate Voice Mailbox feature disabled. When enabled, this feature prevents users from dialing mailbox numbers that do not match valid extension numbers.

4.14 When a mailbox receives a message, the message notification station is signaled by one of the IVX500 ports that is programmed for remote messaging/lamp notification. If a keyset receives a message, the MSG key is lit and the display shows that a message has been received. A single-line set will receive message waiting signals, if they are enabled in the telephone system database.

4.15 If a message notification station has more than one associated mailbox, the message indications (MSG key lamp, display, and/or message waiting tones) will continue until all messages from all associated and unassociated mailboxes have been heard. However, the display does not show which mailbox(es) received the message(s), only that the message waiting indications were received from voice mail. When the Message Notification station user responds to the message (using the feature code or key), he or she will automatically enter the associated mailbox for the extension being used and hear the password prompt. To retrieve a message from an unassociated mailbox, the user must bypass the associated mailbox (press) and enter the correct unassociated mailbox number and password. Or, the user may dial the Voice Mail access number directly, instead of responding to the message using a feature code or key, to bypass the associated mailbox.

D. REMOTE MESSAGE NOTIFICATION

4.16 Remote Messaging is a subscriber feature that can be enabled through database programming. A subscriber with remote messaging can program specific telephone numbers for the voice mail system to call whenever new messages are received by the mailbox.

4.17 Remote notification calls are placed to outside numbers by IVX500 ports that are programmed in the IVX database for remote messaging/lamp notification. The circuits connected to the ports must also be programmed in the telephone system database to have the necessary outgoing access and toll restrictions for the trunks.

4.18 Each mailbox has a Primary and/or an Alternate notification number. The notification numbers are programmed to be accessed during specific days and times.

4.19 The voice mail system monitors subscriber mailboxes continuously. During its monitoring, if new messages have been received (or if the Pager Retry timer expired), the system will check to see if the Primary notification number is turned on. If it is, the system will check the day and time programming. If the current time is within the programmed notification day and time, the voice mail system will make the notification call. If the Primary Number is turned off or if the day or time does not match, the voice mail system will immediately make the same check for the Alternate notification number.

4.20 When the mailbox is being programmed for remote notification, message notification can be set to place the notification call for each new message or only when priority messages are received. (This defaults to "each new message.")

4.21 Remote Message Notification can also be programmed to retry the call periodically when it encounters a busy trunk or trunk group. If the system is not able to place the call within the parameters of the programmed notification day and time (due to busy facilities or invalid programming), the mailbox will receive a message stating that the notification could not be completed (the mailbox owner will hear the message next time he or she accesses the mailbox.)

4.22 If the mailbox user accesses the mailbox between the time the message is received and when remote notification is successful, the remote notification will be canceled. It is assumed that the mailbox user listened to the message when the mailbox was accessed. (However, when the Pager Retry timer expires, the remote notifica-

tion call will be placed again if the user did not take action on the message and/or another message was received.)

4.23 The programmed notification number can be an extension number or an outside telephone number. When an outside telephone number is used, the system will access an outgoing trunk using a remote notification table that contains a pre-programmed trunk access code and will be followed by a programmed access termination feature code, if needed. If the notification number is associated with a pager, a pager dial string, LCD number, and termination code will be sent.

4.24 If the number called is busy or does not answer, the voice mail system will again verify the time of day and day of week parameters. If the Primary Number was just called, the voice mail system will call the subscriber's Alternate number if it is enabled for the current time and day. If neither station can be reached, the system will stop attempting the notification until the Number Called Busy timer expires and notification is attempted again (starting with the Primary Number).

4.25 Notification calls to outside telephone numbers can be sent to a pager or to a number where a person will answer (personal number).

- If the call has gone to a pager, the voice mail system will dial the programmed Pager Answer dial string, the Pager LCD Number Display number and the Pager Termination dial string. Then voice mail system will disconnect the call.
- If the call has gone to a personal number, the voice mail system will play a prompt which announces that the call is from voice mail, play the directory name or mailbox number which originated the call and user instructions. The listener can then enter the mailbox number's password to gain access to the mailbox and hear the message. They have three chances to enter a correct password. If the system receives an incorrect password three times, the voice mail system will disconnect the call immediately and the attempt is considered unsuccessful. It will retry the personal number after verifying that the times and days are valid when checking the mailbox number.

4.26 The IVX500 System can process up to two remote message notification calls outside of the system simultaneously.

4.27 Refer to page 2-15 for subscriber instructions on setting up remote messaging.

E. SUBSCRIBER USE OF VOICE MAIL

4.28 Voice Mail subscriber features include the following:

- Listen to new messages, if any
- Send a message
- Listen to saved messages, if any
- Set personal options
- Set up remote messaging, if enabled

4.29 When a subscriber enters the mailbox, the Voice Mail application may play one of the following messages:

- **Mailbox almost full or full:** If a mailbox is full, no new messages can be received at that mailbox until the subscriber deletes waiting or saved messages.
- **Message count:** A prompt tells the subscriber how many messages are waiting to be heard, if any, and how many are priority messages.
- **Remote messaging:** A prompt will indicate whether primary or alternate remote messaging is selected when remote messaging is enabled. It will also alert the subscriber if a programming error has been detected and/or whether it encountered busy system resources when attempting to place a remote messaging call.

Access To A Mailbox

4.30 A subscriber can access his or her mailbox by following these steps:

- (1) Dial the Voice Mail application access number. (You hear the main menu.)
- (2) During or after the greeting, press ***** to identify yourself as a subscriber.
- (3) Enter your mailbox number and personal password.

Initializing A Subscriber Mailbox Or Extension ID

4.31 The first time a subscriber uses Voice Mail, he or she must customize the mailbox. System prompts will instruct the subscriber to:

- Change the default password number (same as the mailbox number) to a personal password.
- Record a name to identify the mailbox owner in the company directory. (Directory names can be up to 1 minute in length.)
- Listen to the Voice Mail application introduction. (You cannot skip this introduction. If you exit without listening to it, the introduction will play again the next time you access your mailbox.)

4.32 TO INITIALIZE A MAILBOX OR EXTENSION ID:

- (1) Dial the Voice Mail application access number. (You hear the main menu.)
- (2) Press ***** to identify yourself as a subscriber.
- (3) Enter your mailbox number and default password. (Your default password is your mailbox number.)
- (4) Choose and enter a new password using digits 0-9 (up to 12 digits). Then press **#**. Your password is played back.
*If you do not want to use a password, press **#**.*
- (5) Press the **#** key to accept the entry. (Or press **3** if you wish to re-enter your password. and go back to step 4.) The system prompts you to record your directory name.
- (6) After the tone, record your first and last name. When finished, press **#**.
- (7) Press **#** again to accept the name. (Or, press **1** to replay the name you just recorded, **2** to add to your message, or **3** to erase and re-record it.)
- (8) A prompt plays that introduces you to basic Voice Mail features.

4.33 Once your mailbox is initialized, you may use any of the mailbox features provided. To record a personal greeting, or to change your password or directory name, refer to paragraph 4.37 on page 2-14.

Listening To Messages

4.34 There are two types of voice mail messages:

- **New Messages** are messages that you have not yet heard, including Broadcast Messages from the System Administrator and system-sent messages. They are played in the order they were received, except that messages marked "priority" are played first. Some special messages that may be played include the following:
 - *Message receipt:* If a certified message is sent, a system message will be played when the recipient has listened to the message.
 - *Security violation:* The voice mail system has an extra security measure built in which informs a subscriber, after they have logged into their mailbox, whenever three invalid attempts have been made to access their mailbox within a single call. This announcement message will be sent to the affected mailbox each time this situation occurs. It is received as a new message and is accompanied by a message envelope.
- **Saved Messages** are messages that you previously listened to and saved. You can play them back, as necessary, in the order they were saved.

4.35 Whenever you access Voice Mail as a subscriber, you are told how many new and saved messages you have. From the Main Menu:

- (1) Press **[1]** to listen to your new messages.
OR, Press **[3]** to listen to your saved messages.
- (2) The system plays each message in the queue selected, preceded by an "envelope" that tells you the information you have enabled in Personal Options. While you are listening to a message, you can use the following options:

Press **[1]** to back up while listening to a message. (The amount of time is determined by the Replay/Forward/Rewind Increment timer.)

Press **[2]** to pause (for the length of the database-programmed Pause Voice Mail timer). To continue listening, press any key. To exit without completing the message, press **[*]**.

Press **[3]** to skip ahead while listening to a message, or skip to the next message if a message is not playing. (The amount of time is determined by the Replay/Forward/Rewind Increment timer.)

Press **[5]** to play the message envelope again.

Press **[6]** to raise the volume.

Press **[4]** to lower the volume.

Press **[#]** to skip to the end of the recording.

(3) When the message has finished playing, you have the following options:

- a. Press **[1]** to replay the message from the beginning.
- b. Press **[2]** to reply to the message (unless it was a system-sent message or from an outside telephone number). *This option is not provided for receive-only mailboxes.*
- c. Press **[3]** to forward a copy of the message to another subscriber, along with your introductory comments. (If the message was marked "private" when it was sent, you cannot forward it.) *Receive-only mailboxes cannot use this option.*
- d. Press **[4]** to listen to the previous message.
- e. Press **[5]** to play the message envelope again.
- f. Press **[6]** to listen to the next message.
- g. Press **[7]** to save the new message in your mailbox for future action.
- h. Press **[9]** to delete the message from your mailbox. (If you want to reply to or forward a message, do this before you delete it. Deleting a message completely removes it from your mailbox.)

Sending A Message

4.36 As a subscriber, you can record and send voice messages to other users or to group lists from the subscriber Main Menu. Follow these steps:

- (1) Dial the Voice Mail application access number. (You hear the main menu.)
- (2) During or after the greeting, press **[*]** to identify yourself as a subscriber.
- (3) Enter your mailbox number and personal password.
- (4) When you hear the Subscriber Menu prompt, press **[2]** to send a message.
- (5) Dial the desired mailbox number or group list number. *If you do not know the mailbox number, you can press pound (#) to access the company directory to locate and select the mailbox. See page 2-20 for directory instructions. Group lists are not included in the directory.*

If the mailbox is full, a prompt will notify you that the mailbox cannot receive messages. However, it will allow you to leave a message at another mailbox. Leave your message with another subscriber or try again later.

- (6) After hearing the subscriber's name, press **[#]** to accept it.
- (7) When you hear the tone, record your message.

NOTE: If the system detects silence for longer than 5 seconds, it will prompt you to speak up. The recording, if any, will remain unchanged.

*To pause while recording, press **[2]**. To continue, press any key. (The pause length is determined by the Pause Voice Mail timer.)*

*To erase your message, press **[3]**.*

If you exceed the maximum allotted time for message length, a prompt will notify you, and allow you to re-record the message or send the message as it is.

If Voice Mail is full, a message will notify you that it cannot accept your message. Hang up and try again later.

- (8) To send the message, hang up. Or, press **[#]** and go to the next step.

To use the special delivery options, press **[1]**. You can perform *one or more* of the following steps:

Press **[1]** to mark the message "private." (This prevents the recipient from forwarding it to other subscribers.)

Press **[2]** to mark the message "certified." (When a certified message is heard by the recipient, you will receive a receipt notice.)

Press **[3]** to mark the message "priority." (This will place your message ahead of all other waiting messages in the receiving mailbox.)

Press **[*]** to cancel delivery options.

Press **[#]** to deliver the message. (If you wish to mark the message certified, private, and/or priority, do so before completing this step.)

- (9) After the message has been sent, you may choose either of the following options:

Press **[1]** and enter another mailbox number to send the message to another destination.

Press **[#]** to return to the Main Menu.

Personal Options

4.37 Personal Options allow you to customize your mailbox. Each subscriber's mailbox has the following personal options:

- **Greetings:** Your primary or alternate greeting is played to callers when they reach your mailbox. You can change your primary greeting at any time to reflect a change in status and/or record and enable an alternate greeting. If you elect not to record a personal greeting, the default system greeting will be used.

NOTE: There is a database option called "Play Recording Instructions" that affects mailbox greetings. If this option is enabled, the system prompt that tells the caller to leave a message after the beep will play after the primary or alternate greeting. If disabled, the beep will occur as soon as the primary or alternate greeting ends. In the default state, this option is enabled. For programming information, refer to pages 3-39 and 3-44 in PROGRAMMING.

- **Directory Name:** Your recorded name is used to identify you in the directory and to verify your mailbox number when messages are addressed to you by non-subscribers and other subscribers. Although your name is recorded when you first set up your mailbox, you can change it at any time.
- **Password:** Your password is used to prevent unauthorized access to your mailbox. Although you create a personal password when you first set up your mailbox, you can change it at any time.
- **Message Envelope Contents:** Each message is preceded by an "envelope" message that can include time/date the message was left, the source of the message, and the length of the message. You can choose the contents of the envelope that is played before each message or disable the envelope completely. (Even if the envelope is disabled, the subscriber can still enter the code to play the envelope when listening to the message.)

4.38 TO PROGRAM PERSONAL OPTIONS:

- (1) Dial the Voice Mail application access number. (You hear the main menu.)
- (2) During or after the greeting, press **[*]** to identify yourself as a subscriber.
- (3) Enter your mailbox number and password.
- (4) When you hear the Main Menu list of options, press **[4]** to select the Personal Options Menu. You may then do any or all of the following steps.

- (5) To change your personal greeting, press **[1]**. You have the following options:

- a. Press **[1]** to record and/or enable your primary personal greeting or **[2]** to record and/or enable your alternate greeting. The system plays your current greeting. To replay the greeting, you can press **[1]**. Press **[3]** to erase and re-record your greeting as follows:

1. Record your greeting after the tone, then press **[#]**.
2. Press **[#]** again to accept your greeting. (Or, you can press **[1]** to replay your greeting, **[2]** to add to your greeting, or **[3]** to erase and re-record your greeting.)

- b. Press **[3]** to enable the system default mailbox greeting. The system greeting is automatically enabled.
- c. Press **[*]** to exit without changing your greeting.

- (6) To change your recorded directory name, press **[2]**.

- a. After the tone, record your first and last name, then press **[#]**.
- b. Press **[#]** again to accept your recorded name. (Or, press **[1]** to replay your recorded name, **[2]** to add to your name, or press **[3]** to erase and re-record your name.)

- (7) To change your password, press **[3]**.

- a. Choose and enter a new password using digits 0-9 (up to 12 digits). *If you do not want to use a password*, skip this step.
- b. Press **[#]**. Your password is played back.
- c. Press **[#]** to accept the password as entered. (Or, press **[3]** if you wish to re-enter your password.)

- (8) To change your envelope contents, press **[4]**. A prompt plays to tell you the current status of your envelope contents.

- a. To enable or disable the time/date option, press **[1]**. A prompt plays to tell you the current status of the time/date option.
- b. To enable or disable the message source option, press **[2]**. A prompt plays to tell you the current status of the message source option.

- c. To enable or disable the message length option, press [3]. A prompt plays to tell you the current status of the message length option.
- d. To enable all options, press [4]. A prompt tells you that all options are enabled.
- e. To disable all options, press [5]. A prompt tells you that all options are disabled.
- f. To return to the Personal Options menu, press [*].
- g. Press [#] to accept the personal options as entered.

Setting Up Remote Messaging

4.39 Remote messaging is described in detail on page 2-10. To set up the remote messaging parameters, follow the procedure given below.

4.40 TO SET UP REMOTE MESSAGING:

- (1) Dial the Voice Mail application access number. (You hear the main menu.)
 - (2) During or after the greeting, press [*] to identify yourself as a subscriber.
 - (3) Enter your mailbox number and personal password. (If message forwarding is enabled, the prompt will remind you.)
 - (4) When you hear the Main Menu list of options, press [5] to select the Remote Messaging Menu.
 - (5) Press [1] to set up a Primary destination, or press [2] to set up an Alternate destination. A prompt tells you what your current remote messaging status is. (If desired, press [*] to return to the Personal Options Menu.)
- (6) You have the following options:
- a. Press [1] to turn remote messaging on or off. If turning it on, press [1] to enable pager notification or press [2] to enable personal number notification. Then, press [1] to have it notify you for any new message or press [2] to have it notify you on priority messages only. NOTE: You cannot enable remote messaging until a telephone number has been programmed.
 - b. Press [2] to set up or change the telephone number. Then enter the telephone number followed by [#]. It will play back for your verification.
 - c. Press [3] to set up the time of day. Then, when prompted, enter the time at which you wish to have the message notification start and stop. Enter the times with two digits for the hour and two digits for the minutes. If entering the time in 12-hour format, you will be prompted to press [1] for AM or press [2] for PM. NOTE: If you wish to have 24-hour notification, program the starting and ending times to be the same.
 - d. Press [4] to set up the days of week for remote messaging. Then press [1] for messaging Monday-Friday, [2] for all days, or [3] to select individual days. If you selected individual days, you will be prompted to press digits 1-7 which correspond to the days Sunday through Saturday. Your select will be played back.
- (7) The options prompt returns. Either select another option, as described above, or press [#] to save the settings and exit.

F. NON-SUBSCRIBER USE OF VOICE MAIL

4.41 Callers who do not have a subscriber mailbox can leave messages for subscribers. Also, Subscribers can use this method for leaving messages without accessing their mailboxes. If a non-subscriber message is left using a station with an associated mailbox, the receiving mailbox Subscriber can reply to the message, if desired, and the reply will be sent to the caller's associated mailbox.

4.42 Non-subscribers can gain access to the voice mail system through the automated attendant (by dialing the Voice Mail application extension number), through a call transfer, by placing an intercom call to the Voice Mail application extension number, or by being forwarded to voice mail.

Leaving A Message

4.43 TO LEAVE A MESSAGE AS A NON-SUBSCRIBER:

- (1) *If you hear the voice mail greeting or menu, dial the desired mailbox number. If you do not know the number, you can press pound (#) to access the mailbox directory to locate and select the mailbox. See page 2-20 for directory instructions.*

If you hear a subscriber's personal mailbox greeting, skip this step.

- (2) *If the mailbox is full, a prompt will notify you that it cannot receive messages. However, it will allow you to leave a message at another mailbox.*

Leave your message with another subscriber or try again later.

- (3) After hearing the subscriber's greeting and a tone, record your message.

To call the attendant, press [0].

To pause while recording, press [2]. A prompt will tell you that the recording has been stopped. To continue, press any key except [0].

To erase and re-record your message, press [3].

To cancel the recording and return to the main menu, press [].*

If you exceed the maximum allotted time for message length, a prompt will notify you and allow you to re-record the message or send it.

If Voice Mail is full, a message will notify you that it cannot accept your message. Hang up and try again later.

- (4) When you have completed your message, you have the following options:

If you are satisfied with your message, hang up. OR press [#] for additional options and return to step 1.

If you wish to hear your message, press [1].

If you wish to add to your message, press [2] and continue your message as described in step 3.

To erase and re-record your message, press [3].

G. SYSTEM ADMINISTRATOR FEATURES

4.44 The voice mail System Administrator can use special features that are not provided to Subscribers. The System Administrator mailbox has all standard subscriber features plus the ability to do the following:

- Record a Broadcast Message
- Perform Mailbox and Group List Maintenance
- Create and select custom recordings (voice mail company greetings, auto attendant recordings, call routing announcements, and hunt group overflow and announcement station recordings).

4.45 To enter the System Administrator's mailbox, the System Administrator dials the Voice Mail access number, presses [*] to access the main menu, enters the System Administrator's mailbox number, then presses [9] to reach the System Administrator Menu. (There is not a prompt for entering the [9].)

Broadcast Messages

4.46 The System Administrator has the ability to make a single recorded message and send it to all Standard and Receive-Only subscriber mailboxes. (Extension IDs do not receive Broadcast Messages.)

4.47 TO RECORD A BROADCAST MESSAGE:

- (1) Dial the Voice Mail application access number. (You hear the main menu.)
- (2) During or after the greeting, press [*] to identify yourself as a subscriber.
- (3) Enter the System Administrator mailbox number and password.
- (4) Press [9] to access the System Administrator's Menu.
- (5) When you hear the System Administrator Menu list of options, press [1] to send a broadcast message.
- (6) Record your message.

To pause while recording, press [2]. To continue, press any key except [0].

To erase and re-record your message, press [3].

If you exceed the maximum allotted time for message length, a prompt will notify you and allow you to re-record the message or send it.

If Voice Mail is full, a message will notify you that it cannot accept your message. Hang up and try again later.

- (7) When you have completed your message, you have the following options:

If you are satisfied with your message, hang up. OR press [#] for more options.

If you wish to hear your message, press [1].

If you wish to add to your message, press [2] and continue your message as described in step 6.

To erase and re-record your message, press [3].

Mailbox/Group List Maintenance

4.48 Using the System Administrator's mailbox, the administrator may provide basic voice mail mailbox and group list system maintenance. This maintenance includes the following:

- Record the name of a standard subscriber mailbox, extension ID, or a group list.
- Record the mailbox greeting and set personal options for a subscriber mailbox.
- Set the password for a subscriber mailbox or extension ID.

4.49 The System Administrator does not need to know the Subscriber's password to perform maintenance on a subscriber mailbox.

4.50 TO PERFORM MAILBOX/GROUP LIST MAINTENANCE:

- (1) Dial the Voice Mail application access number. (You hear the main menu.)
- (2) During or after the greeting, press [*] to identify yourself as a subscriber.
- (3) Enter the System Administrator mailbox number and password.
- (4) Press [9] to access the System Administrator's Menu.
- (5) When you hear the System Administrator Menu list of options, press [2] to access the Mailbox/Group List Maintenance option.
- (6) Dial the mailbox, extension ID, or group list number to be accessed.

If programming a mailbox or extension ID, you hear the Personal Options menu. Follow the instructions on page 2-14 to program the personal options (name, password, message envelope, or greeting) for the selected mailbox.

If programming a group list, the current name if any is played. You are prompted to enter a name. After the tone, record the name for the selected list or ID. When you are finished, press [#]. Then press [#] again to accept the name. (Or, press [1] to replay the name you just recorded, [3] to erase and re-record it.)

Custom Recordings

4.51 The System Administrator can create and select up to 50 custom recordings (voice mail company greetings, auto attendant greetings, call routing announcements, and hunt group announcement/overflow recordings). Each recording has an assigned number. Numbers are then assigned to specific applications using the System Administrator's mailbox or through database programming.

4.52 Any recording number (01-50) can be assigned to any IVX500 System application. In the default state, Recording 01 is automatically defaulted to play the system-provided Voice Mail main greeting and Recording 02 is reserved for the Automated Attendant main greeting. The default recordings can be changed, but will be returned to system-provided values if the system is defaulted. A single recording may be used for multiple applications.

4.53 After making the required recordings, the System Administrator must determine which ones play during the telephone system's day and night modes of operation. This can be done from either the System Administrator's mailbox or through database programming.

4.54 The System Administrator must enter a valid two digit recording number (or a single digit followed by #) for recordings 1-9) before a custom recording can be made. If a valid number has been entered and a previous recording exists, the IVX500 System will play it. (This includes the two standard default greetings.) When no recording is associated with recording number, the System Administrator will be prompted to create a recording.

4.55 Once the recording is installed it replaces any previous recording. The only recordings that can be retrieved are system default recordings 01 and 02. They can be retrieved by defaulting the IVX500 System. If a recording has been previously made but the System Administrator chooses to make a change to it, the IVX500 System will play the current recording before offering the option of accepting it as it is, replaying it or erasing and re-recording it.

4.56 The maximum recording time for each custom recording is determined in database programming when the maximum greeting lengths are established for all subscribers.

4.57 TO RECORD CUSTOM RECORDINGS:

- (1) Dial the Voice Mail application access number. (You hear the main menu.)
- (2) During or after the greeting, press [*] to identify yourself as a subscriber.
- (3) Enter the System Administrator mailbox number and password.
- (4) Press [9] to access the System Administrator's Menu.
- (5) When you hear the System Administrator Menu list of options, press [3] to select the Record Custom Recordings option.
- (6) When prompted, enter the desired recording number (01-50). If a recording exists, it is played. If not, go to the next step.

To hear the recording again, press [1].

If you wish to leave the recording unchanged, press [#]

If you wish to re-record the recording, press [3] and continue to the next step.

- (7) When prompted, record the greeting or message.
To pause while recording, press [2]. To continue, press any key.

If you exceed the maximum allotted time for recording length, a prompt will notify you and allow you to re-record or save it.

If the IVX500 PC disk is full, a prompt will notify you that it cannot accept your recording. Hang up and try again later.

- (8) When you have completed your recording, you have the following options:

If you are satisfied with your recording, hang up. OR press [#] for more options.

If you wish to hear your recording, press [1].

If you wish to add to your recording, press [2] and continue your recording as described in step 3.

To erase and re-record your recording, press [3].

4.58 TO ASSIGN CUSTOM RECORDINGS TO SPECIFIC APPLICATION EXTENSION NUMBERS:

- (1) Dial the Voice Mail application access number. (You hear the main menu.)
- (2) During or after the greeting, press * to identify yourself as a subscriber.
- (3) Enter the System Administrator mailbox number and password.
- (4) Press 9 to access the System Administrator's Menu.
- (5) When you hear the System Administrator Menu list of options, press 4 to select the Select Custom Recordings option.
- (6) When prompted, enter the extension number of the application to be programmed. (For example, if users dial 299 to reach Voice Mail, enter 299 to program the Voice Mail greeting.) Or, press * to exit to the System Administrator menu.
- (7) When prompted, select whether the recording will be played during day mode (by pressing 1) or during night mode (by pressing 2).
- (8) When prompted, enter the desired recording number (01-50). If a recording exists, it is played. (If not, you hear a warning that the recording has not yet been made.)
- (9) If it is the correct recording, press #. Return to step 6.

↓ TO GO BACK.

NEXT MSG.

5. DIRECTORIES (AUTOMATED ATTENDANT, CALL ROUTING ANNOUNCEMENT, AND VOICE MAIL)

5.1 There are two types of directories that can be enabled (or disabled) in the system: Voice Mail and Automated Attendant.

- The Voice Mail Directory is a list of mailbox subscribers, their recorded names, and mailbox numbers.
- The Automated Attendant Directory, provided to all Auto Attendant callers, is a list of all mailbox subscribers and extension ID owners and their recorded names.

5.2 The directories can be selected in the following ways:

- From the Voice Mail or Automated Attendant main menu: Press the **#** key.
- Using a Call Routing Announcement application: Press the Digit Translation digit designated for directory access.
- As a Voice Mail Subscriber: Subscribers can access the directory whenever they are prompted to enter a mailbox number.

5.3 If a directory is disabled or empty because no names are recorded for any of the system's mailboxes and extension IDs, callers will not hear the prompt that allows access to the directory. However, the caller will be instructed that the selection is invalid and returned to the initial instructions.

5.4 Recorded names are added to the directories during mailbox or extension ID initialization. If the mailbox or ID is not initialized, the directory will include only the mailbox number or extension ID number. (Group Lists are not included in either type of directory.)

5.5 The caller uses the keypad keys to enter the name. The application then plays the closest matching directory name that corresponds to the digits entered by a caller. Once the name has been played the system will return a menu of options, including the following:

- Listening to the previous or next name in the directory
- Listening to additional information (This option is not available if the mailbox or extension ID number has been classified in the database as a "Private" number.)
- Spelling a new name

- Changing from a last to first name search mode
- Accepting the name

A. LOCATING A NAME

Entering A Name

5.6 Callers use a method called Quick Spell. To use Quick Spell, callers press a single digit key on the telephone dial pad for each letter or character entered. For example, keypad key **2** shows ABC, key **3** shows DEF, etc. To enter JONES, you would press **5****6****6****3****7**. Some characters are not shown on the keys: for "Q" press **7**, for "Z" press **9**, for punctuation marks press the **1** key.

5.7 After the digits have been entered, the caller presses **#** to begin the search. The Automated Attendant application plays the name that most closely matches the digit(s) that were entered. If **#** is pressed without entering any digits, the caller will hear the first name in the directory.

5.8 If a user presses **0** at any time while spelling a name, the system will play a helpful prompt instructing the caller how to enter a name.

Changing The First/Last Name Search

5.9 Each directory can be programmed to be organized by last name or by first name. Callers accessing a directory receive system voice prompts that ask them to enter the first or last name of the person for whom they wish to leave a message.

Listening To The Next/Previous Name

5.10 After a name has been played, the caller can listen to the previous name in the directory by pressing **1**. To listen to the next name, the caller can press **3**.

5.11 The directory lists are circular. That is, when the end of the list is reached, the next name played will be the first name in the directory. Or, if the caller scrolls past the beginning of the list, the "previous" name played will be the last name in the directory.

B. ACCEPTING A NAME

5.12 When the caller is using the Voice Mail feature, and accepts a name, the caller is transferred to the corresponding mailbox. There the caller will hear either the subscriber's recorded greeting, recorded directory name, or, if no recording has been made, the "mailbox number XXX is not available" prompt. The caller can then record a message.

5.13 If the caller is using the Automated Attendant feature, and accepts the name, the caller is transferred to the selected destination (station or mailbox) if it is available. If a station extension is dialed and the destination is not available, the caller is sent to the associated mailbox, if one exists.

C. REQUESTING ADDITIONAL INFORMATION

5.14 After a name is selected from the directory, the caller has the option of requesting additional information. When requested, mailbox number, extension number, and name are played (if the number is not private and/or unlisted).

5.15 Individual mailboxes and extension IDs can be programmed as "Private" in database programming. A Private number is included in the directory and can be dialed by a caller who knows the number, but the associated mailbox and extension number information are not available to the caller; only the name is played.

5.16 Mailboxes and extension IDs can also be programmed as "Unlisted." That means that the number will not be included in the directory, but can be dialed if the caller knows the extension number.

D. USING THE DIRECTORIES

5.17 TO USE A DIRECTORY:

- (1) Dial the Voice Mail access number. (You hear the recorded system greeting or main menu.)
- (2) Press **#** to access the Directory Services application.
- (3) Use the keys on your telephone to enter the desired name, then press **#**. (If you wish to exit from the directory without selecting a name, press ***** or hang up.)
- (4) The Voice Mail application will play the selected name. Do one of the following:

*To accept the name, press **#**.*

*To hear the previous name in the directory, press **1**.*

*To hear additional information for the selected name (if allowed), press **2**.*

*To hear the next name in the directory, press **3**.*

*To spell a different name, press **4** and repeat step 3.*

*To switch the first/last name sort order, press **5**.*

PROGRAMMING

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1. INTRODUCTION

1.1 This section of the Inter-Tel IVX500 System manual explains how to program the system. Programming functions are divided among several "windows" so that specific features can be programmed easily.

NOTE: Programmers must be properly certified on the IVX500 System to receive technical support.

2. PLAN THE PROGRAMMING SESSION

2.1 Determine the features that need to be programmed to meet the customer's needs. Then refer to the specific programs and program planning sheets. For example, when programming an application, refer to the programming information on page 3-17 and the program planning sheet on page 3-68.

2.2 For detailed programming instructions for programming the various IVX500 applications, refer to the APPLICATION AND TELEPHONE SYSTEM SETUP section.

3. MICROSOFT WINDOWS

NOTE: The following information is provided by Microsoft, regarding their licensing policies.

3.1 Database Programming operates in a graphics environment called *Microsoft Windows*, created by Micro-

soft Corporation. An extension of the MS-DOS operating system, *Microsoft Windows* gives a standard look and feel to Database Programming and all other *Windows* applications.

3.2 The Database Programming package contains all the software necessary to run Database Programming. You must run Database Programming under *Microsoft Windows* version 3.1 or higher.

3.3 With *Microsoft Windows*, you can take advantage of these additional features of the *Windows* environment:

- **Running multiple applications:** You can run several applications under *Windows* at one time and easily switch between them, creating an integrated work environment.
- **Data exchange between applications:** You can transfer data between Database Programming and other standard DOS applications as well as other *Windows* applications.
- **Windows control of the DOS environment:** From the *Windows* environment you have easy access to all *Windows* and non-*Windows* applications, files, directories, and disks, and control all DOS-related tasks such as directory or file management and formatting disks.

3.4 To run Database Programming with other applications under *Microsoft Windows*, you need to license and install *Microsoft Windows* version 3.1 or higher.

4. HOW TO USE THE PROGRAMMING WINDOWS

4.1 The database is divided up into “windows” that permit the programmer to view and change the system programming one section at a time. Each of the programming windows contains boxes and/or buttons for selecting and entering specific information. These include: Text Boxes, List Boxes, Drop-Down List Boxes, Command Buttons, Option Buttons, and Check Boxes. Samples of each are shown in the following paragraphs.

4.2 To move among items in a window, you may use the TAB key, ALT key, or mouse, as follows:

- **Using the TAB key:** Press the TAB key repeatedly until the desired area is highlighted by a gray box and a dark outline or filler. To move in reverse, press the SHIFT and TAB keys at the same time.
- **Using the ALT key:** Pressing a combination of the ALT key and the underlined character allows you to move directly to the desired area. (For example, in the following sample Text Box, you would use ALT-D because the “D” in Description is underlined).
- **Using a mouse:** To select an item, simply place the mouse cursor on the desired item and click the left button.

A. TEXT BOX

EXAMPLE:

Description:

4.3 A text box is used when the requested information requires typing. The vertical line is the cursor that indicates where text will be inserted. As you type, the line moves to the right, pushing any existing text to the right. The line can be moved right or left using the arrow keys on the keyboard or by pointing the mouse cursor at the desired place and clicking the left button once.

4.4 If the contents of the box are highlighted (in reverse video) when you begin typing, the contents are replaced with the new information. You can erase the entire contents of a text box by highlighting the text and then pressing the backspace or delete key. To overwrite the current information, start entering new information.

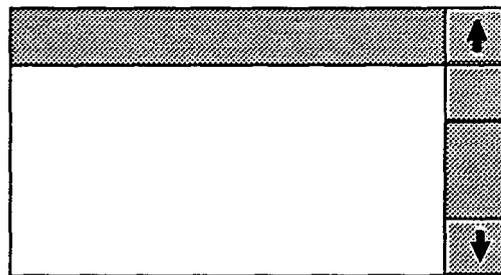
4.5 To correct mistakes made while entering information or to erase existing information, use the backspace or delete key and retype the entry.

4.6 To select a text box, follow the instructions in paragraph 4.2. When the cursor appears in the box, you can begin typing.

4.7 The system recognizes both upper- and lower-case characters. When typing, you may use either case or a combination.

B. LIST BOX

EXAMPLE:



4.8 The list box is used for several purposes, as follows:

- **Typed information:** When programming items such as timers, the list box shows the current values. Whenever an item in the list is (re)programmed, the list box shows the new information.
- **Include/Exclude lists:** Some programs require you to list the applications, mailboxes, or extension IDs that are on “include” or “exclude” lists. To move an item from one list to the other, highlight the desired item and select the appropriate command button. It is automatically moved or copied to the other list.

4.9 There are several methods for highlighting a line in a list box. They are as follows:

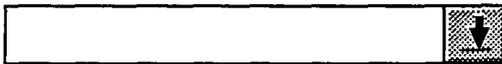
- **Mouse:** To select an item, simply place the mouse cursor on the desired item and double-click the left button.
- **Arrow keys:** Use the up or down arrow key to move the highlight bar.
- **HOME, END, PAGE UP and PAGE DOWN keys:** You can use the HOME key to move directly to the top of the list, or the END key to move directly to the bottom. The PAGE UP and PAGE DOWN keys move up or down the list one screen at a time.

- **First letter or digit of desired item:** When a list is presented in alphabetical or numerical order, you can quickly move to the first item beginning with a specific letter or number by entering that character. For example, for a list of timers by name, you can move to timers that begin with "D" by pressing the D key. You can then scroll through those entries by pressing the selected letter repeatedly. That is, each time you press the D key, the highlight bar scrolls to the next entry that begins with "D."
- **Scroll bar:** When the list contains more items than can be shown in the list box, there will be a scroll bar along the right edge of the list box. It is made up of a band with an arrow at each end and a small box (as shown in the List Box example). The box shows the current position in the list. The band is a scroll bar and it is used, with the mouse cursor, to move through the list. Point the cursor at either of the arrows and click the left button to move one line at a time, or point the cursor at the box and hold down the left button. Moving the mouse "drags" the box up or down and scrolls through the list.

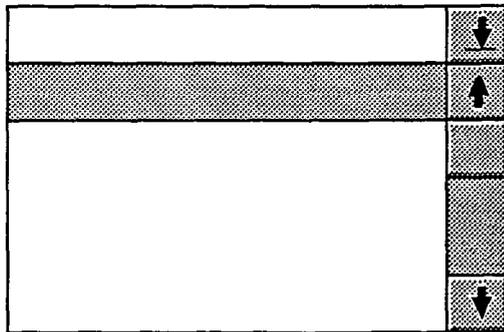
4.10 To program a highlighted item in the list box, select an appropriate command button (like the Program command button shown in several windows) in the window. Or, if using a mouse, double-click on the list box item to gain access to the programming window.

C. DROP-DOWN LIST BOX

EXAMPLE:



4.11 When selected, a drop-down list box becomes a list box as shown below. To select an item, use the up or down arrow key to move the highlight bar. When deselected (closed) the list box will show the chosen option.



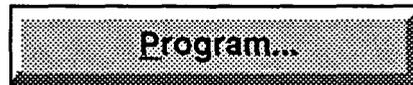
4.12 To open a drop-down list box, do one of the following:

- **Mouse:** Point the cursor at the arrow and click the left mouse button. Scroll through the list as described above for list boxes. To close the box, point to the arrow and click again.
- **Keyboard Commands:** Highlight it and press ALT-▼. To close the box, press ALT-▲. To scroll through the list without opening the drop-down box, highlight the box and press ▼ and ▲.

4.13 When scrolling through the list, you cannot "wrap" to the beginning of the list after reaching the end (or wrap to the end from the beginning). The list is linear and will stop when you reach the beginning or ending entry.

D. COMMAND BUTTON

EXAMPLE:



4.14 Selecting a command button executes a single command or allows access to another window. If the command is followed by an ellipsis (...), it will call up a window. To select a command button, do one of the following:

- **Mouse:** Place the mouse cursor on the desired command button and click the left button.
- **TAB key:** Use the TAB key to advance to the command button and to *highlight* it. Then press the SPACE BAR or RETURN to *select* it.
- **ALT key:** Press the ALT key plus the underlined character. (In the sample above, you would use ALT-P to execute the Program command).

NOTE: The OK and Cancel command buttons do not have underlined letters. To quickly select Cancel, you may press ESC. For OK, you may press ALT-ENTER.

4.15 Frequently, a command button is highlighted by a dark border while you are programming in a window. If so, pressing the RETURN key will execute that command automatically. You do not need to TAB to the button first.

E. OPTION BUTTON

EXAMPLE:



4.16 Option buttons are used when there are two or more options for a feature and you can choose only one. The options are shown in a list and the buttons are located along the left. Selecting the desired button places a dot in it to show which option was chosen.

4.17 Option buttons can be selected using one of the following methods:

- **Mouse:** Place the mouse cursor on the desired option button and click the left button.
- **TAB key:** Use the TAB key to advance to the list of options. Then use the up or down arrow key to move the dot to the desired button.
- **ALT key:** Press the ALT key plus the underlined character to move the dot to the desired option. (In the sample above, you would use ALT-D or ALT-P.)

F. CHECK BOX

EXAMPLE:



4.18 Check boxes are used when an option is available that has only two states (on/off, enabled/disabled, or yes/no). When the box is selected, a check mark is placed inside it to indicate an affirmative state (on, enabled, or yes). Selecting a box that already contains a check mark, removes the check mark (off, disabled, or no).

4.19 Check boxes can be selected using one of the following methods:

- **Mouse:** Place the mouse cursor on the desired check box and click the left button.
- **TAB key:** Use the TAB key to advance to the check box to *highlight* it. Then press the SPACE BAR to *select* it.
- **ALT key:** Press the ALT key plus the underlined character to place the check mark in the box or remove it. (In the sample above, you would use ALT-D.)

G. ITEMS THAT CANNOT BE SELECTED — DIMMED ITEMS

4.20 If an item in a window appears in a dimmed color, it cannot be selected unless an associated item is selected. For example, in the Create Applications programming window shown on page 3-20, the Quick Message Retrieval option is dimmed and cannot be selected if a Quick Message Retrieval application already exists (there can be only one per system).

H. HOURGLASS SYMBOL CURSOR

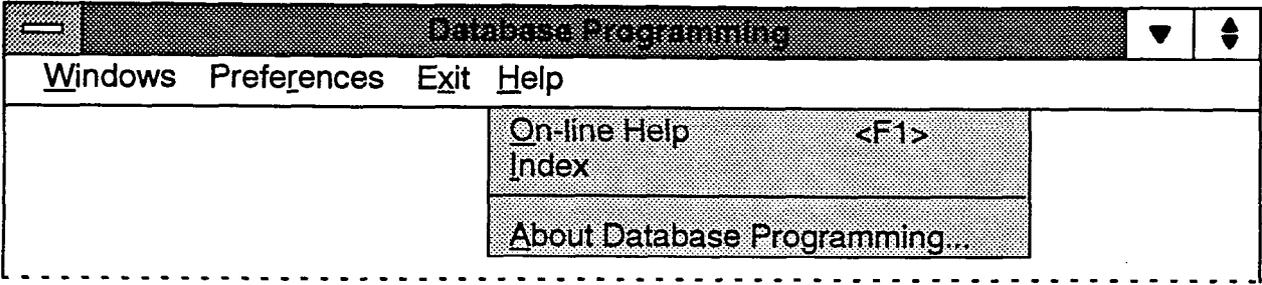
4.21 Occasionally, the system will change the cursor to an "hourglass" shape. This indicates that the system is performing an internal operation and cannot respond to input. Wait for the cursor to return to normal before entering more information.

I. MANAGING MULTIPLE WINDOWS

4.22 One of the most useful Windows features is the ability to have several windows open simultaneously. Refer to your Windows user manual for detailed information on running multiple applications, minimizing windows, arranging icons, and arranging windows.

4.23 The window shown on page 3-15 has a drop-down list box, labeled "Windows," that includes the following options:

- **Cascade Windows:** This option is used when you have several windows open. Selecting this option reduces the size of the windows and arranges them in layers so that each title bar is visible. The active window is in front and fully visible.
- **Tile Windows:** This option is also used for multiple windows. Selecting it reduces the size of the windows and arranges them side by side. The mouse cursor indicates the active window.
- **Arrange Icons:** If you have one or more windows reduced to icons, selecting this option will arrange them in a row along the bottom of the screen.
- **List of Open Windows:** At the bottom of the drop-down menu, any open database windows are listed. A check mark next to a window name indicates the currently active window. To change windows, scroll to the desired name. Note that you cannot select a window that contains information that is affected by a window already in use; you will receive an error message if you attempt to open two windows that affect the same programming information.



5. USING THE HELP UTILITY

5.1 The system has an on-line Help feature that provides general and context-related information. You can easily find information on features, programming entries, and parameters. And, you can move among the topics to read information on related subjects.

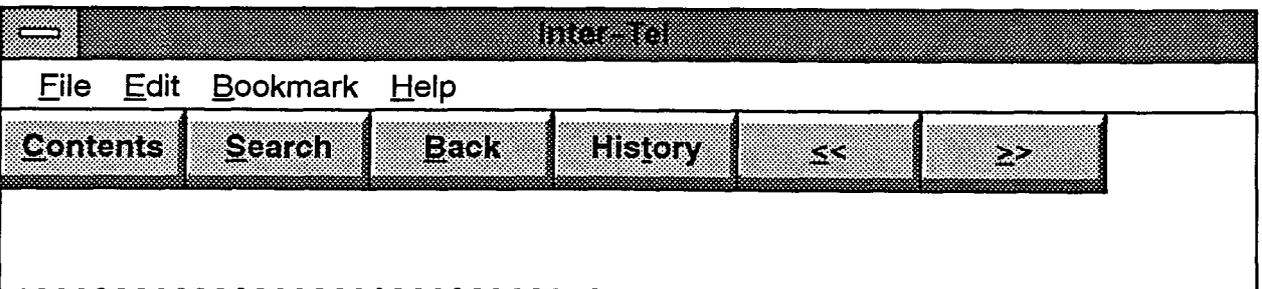
5.2 Help is available from any programming window. To read the Help files, use one of the following methods:

- Select the Help drop-down menu from a window header (like the one shown above) by pressing ALT-H or selecting it with a mouse. When the menu is displayed, press O or use the mouse to select On-Line Help to enter the Help utility or use the arrow keys, if necessary, to highlight it and press RETURN to select On-Line Help. To see an index of Help files, press I or select Index.
- Press the F1 key on your keyboard. This give you access to the Help file that is related to the active window in your programming session. (The programming area where your cursor is located is the active window.)

5.3 The Help Utility is used as you would any Windows application help utility. (You may wish to refer to your Windows manual if you are unfamiliar with Help.)

5.4 The Help Utility window has a top banner as shown below and the selected text is shown in the lower portion of the screen. The four commands along the top of the Help screen are used for access to the drop-down menu topics, as shown in the following table:

COMMAND	DROP-DOWN MENU OPTIONS
File	<i>Open:</i> This allows you to open other files. <i>Print Topic:</i> This option prints the displayed topic. <i>Print Setup:</i> This allows you to set your printer parameters. <i>Exit:</i> Select this option to exit from the Help Utility.
Edit	<i>Copy:</i> Use this option to copy the displayed topic to your Windows clipboard. <i>Annotate:</i> This allows you to make notes about the Help topic and store them in the Help utility for later reference.
Bookmark	<i>Define:</i> This allows you to place a "bookmark" on a Help topic so that you can return to it quickly. You can also delete bookmarks using this menu. <i>List of Marks:</i> Existing bookmarks are listed and can be selected.
Help	<i>How to Use Help:</i> Select this option for complete instructions on using Help. <i>Always on Top:</i> Select this option to keep the Help window positioned in front of all others. <i>About Help:</i> This option displays licensing information.



5.5 There are also six command buttons along the top edge of the Help Utility window. The functions of these buttons are as follows:

COMMAND	FUNCTION
Contents	This displays the Table of Contents for the On-Line Help topics.
Search	This button displays a text box window that allows you to type in a key word or phrase that you would like to locate.
Back	After you have moved from topic to topic, this allows you to back up one topic at a time, each time it is selected.
History	This displays a window that shows a sequential list of the topics you have looked at. You can scroll through the list and select the topic that you would like to view.
<<	Selecting this button displays the previous topic in a series. If there is no previous topic, the button is dimmed and cannot be selected.
>>	Selecting this button displays the next topic in a series. If you are in the last topic of the series, the button is dimmed and cannot be selected.

6. SYSTEM SET-UP FOR PROGRAMMING

6.1 There are three methods that can be used for programming the IVX500 System.

- On-site programming with an attached PC
- Remote programming using a modem connection
- Programming using a stand-alone PC

NOTE: Stand-alone programming should be used for training and demonstration purposes only. Data programmed during a stand-alone session cannot be transferred to the IVX500 PC using Database Save/Restore.

6.2 Each is described separately on the following pages. Only one programming session can be in operation at a time.

6.3 The programming computer must be an IBM AT-compatible personal computer (PC) with a minimum of:

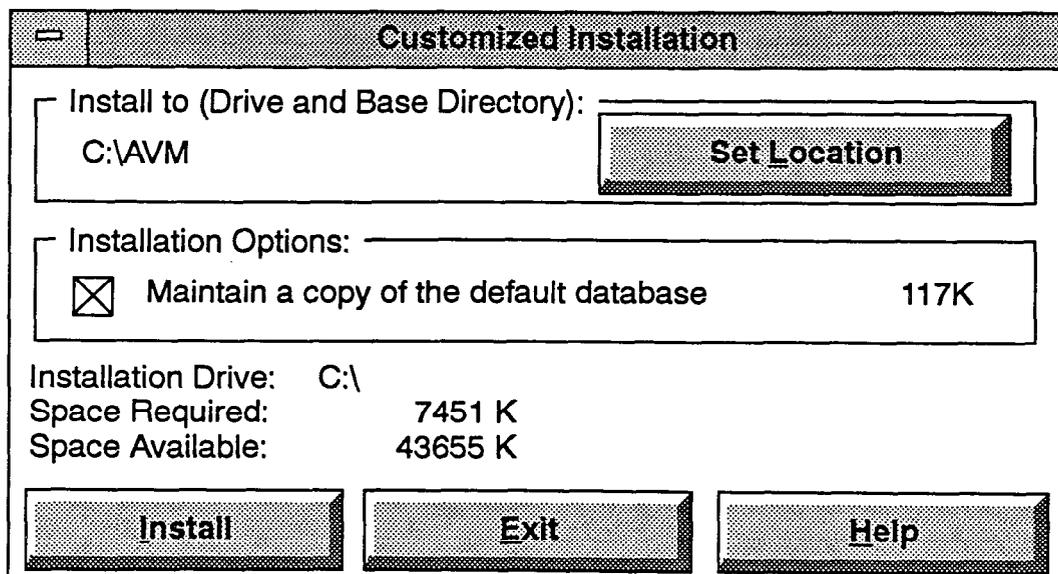
- 80286 or higher microprocessor (80386 recommended)

- 5 megabytes (MB) available memory on the hard disk drive
- 3½-inch (1.44MB) double-sided/high-density floppy disk drive
- Windows 3.1
- MS-DOS 3.3 or higher (MS-DOS 6.2 recommended)
- 1 MB available RAM (2 MB recommended)
- EGA or better graphics monitor (VGA recommended)
- COM port (RS-232-C serial communications port)
- A programming mouse is optional but recommended (if a serial mouse is used, install on an unassigned COM port)
- A 1200- or 2400-baud, internal or external modem is required for remote programming

A. INSTALLING THE PROGRAMMING SOFTWARE

6.4 The following instructions assume that Windows 3.1 software is installed on the programming PC and the user is familiar with Windows procedures. To install the programming software, follow these steps:

- (1) Ensure that Windows 3.1 is running.
- (2) Open the Program Manager. Ensure that the Program Manager Option for "Minimize on use" is not enabled.
- (3) Insert Database Programming Disk 1 into the PC floppy disk drive (A or B).
- (4) Select the "File" drop-down menu in Program Manager. Then select "Run..." from that menu. A window with a text box appears.
- (5) In the Command Line text box, enter A:SETUP (or B:SETUP if the B drive is used). Then select the OK command button. A "Welcome" window appears.
- (6) Select the Continue command button to proceed with the installation. (Or, select Exit to cancel the installation.)
- (7) When the window shown at the bottom of this page appears, follow these steps.
 - a. *If you want to change the installation drive and/or directory*, select the Set Location command button. A window appears that allows you to enter a new drive and/or directory. Then, select Continue to save the new drive and return to the window. Or, to leave the drive unchanged, select the Back command button. To cancel the installation, you can select the Exit command button.
 - b. *If you want to preserve an existing database*, make sure the check box in the Installation Options section is selected (has an X in it).
 - c. To continue with the installation, select the Install command button. Or, to cancel the software installation, select the Exit command button.
- (8) Another window appears that shows the names of the files as they are being copied and the percent of the installation that has been completed. When prompted, insert Database Programming Disks 2 and 3 in succession. Each time, select the OK command button to continue.
- (9) When the installation is complete, the PC will display several messages regarding the installation. Read each of these and then select OK to continue.
- (10) The setup will create an IVX500 System programming group that contains the IVX500 System application. (If an IVX500 System programming group already existed, the newly installed IVX500 System application will be added to that group and the upgrade icon.) To use the application, you must have Program Manager running. Select the IVX500 System programming group and then select the Database Programming application. The Inter-Tel logo screen displays and you may begin your programming session.



B. ON-SITE PROGRAMMING

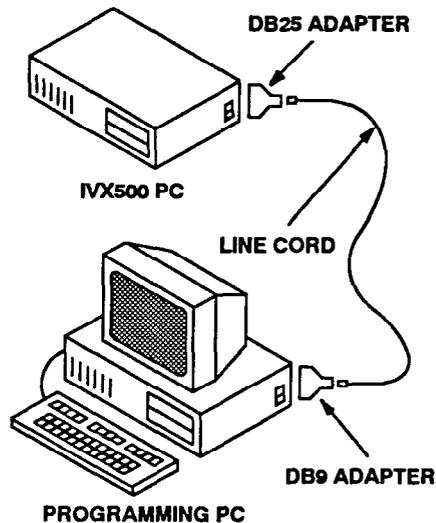
6.5 For on-site programming, the PC is connected directly to the IVX500 System. An RS-232-C cable from COM1 or COM2 on the programming PC is connected to COM2 on the IVX500 PC. (See page 3-8 for a list of the programming PC's requirements.)

6.6 To connect a programming PC to the IVX500 PC, follow these steps:

- (1) Referring to the diagram below, attach the DB25 modular adapter (supplied with the database programming cable kit) to the DB25 (COM2) serial port connector on the IVX500 PC.
- (2) Attach the DB9 modular adapter (supplied with the database programming cable kit) to the DB9 (COM1) serial port connector on the customer-provided programming PC.

NOTE: To use COM2 on the programming PC instead, attach a straight-through DB9-to-DB25 converter to the DB9 modular adapter, or attach a customer-provided DB25 modular adapter.

- (3) Plug one end of the reversing mod-to-mod line cord (supplied with the database programming cable kit) into the DB25 modular adapter installed in step 1. Plug the other end of the line cord into the DB9 modular adapter installed in step 2.



6.7 To begin a direct-connection programming session, press F5 (or press ALT-S and then select "Connect to Remote System" from the pull-down menu) while the Inter-Tel logo is displayed. The window shown on the page 3-12 appears. You can then set the correct session information.

C. STAND-ALONE PROGRAMMING

6.8 To use a PC for stand-alone programming, the system software must be loaded on the hard drive. **NOTE:** Stand-alone programming should be used for training and demonstration purposes only. Data programmed during a stand-alone session cannot be transferred to the IVX500 PC using Database Save/Restore.

6.9 When the Inter-Tel logo screen is displayed, press the F3 key. Or, press ALT-P to view the System Programming pull-down menu and then select Database Programming by highlighting it (use the up or down arrow key, if necessary) and pressing RETURN. The Database Programming Menu appears. All programming can then be completed as described in this chapter.

D. REMOTE PROGRAMMING VIA MODEM

6.10 A programmer can use modem access to the system database for the purpose of customer programming or maintenance/diagnostics from a location other than the customer site. This allows the service personnel flexibility in making database changes without visiting the site and, in system trouble situations, the service personnel may perform preliminary investigations before going on site.

6.11 The customer site must be equipped with an external auto-answer modem connected to the IVX500 PC on COM2.

6.12 To use the remote programming feature, the user dials the telephone number that directly rings in to the modem, is transferred to the modem, or dials the modem extension number using DISA or a station. When the modem circuit rings, the auto-answer modem will automatically answer the call and generate modem tone. The calling party may then connect the programming computer's modem and proceed with the programming session. When the session is completed, the calling party hangs up or disconnects the call from the modem. When this happens the system modem will no longer hear modem tone and will disconnect.

6.13 To set up or check the modem parameters, run the IVX500 System application and display the logo screen (shown on page 3-14). Then select the "System Programming" drop-down menu and choose the Modem Programming option from the menu. A window appears as shown on the next page.

6.14 To connect a remote programming session while the Inter-Tel logo screen is displayed, press F5 (or press ALT-S and then select "Connect to Remote System" from the pull-down menu). The window shown on page 3-12 is displayed. You can then set the correct session information.

Programming Modem Parameters

6.15 The window shown below is used for setting up the modem parameters. It can be chosen by selecting Modem Programming from the System Programming drop-down menu in the Inter-Tel logo screen header. Enter the necessary information as follows. The default values are shown below. Refer to the user manual for your modem to determine the necessary parameters.

6.16 MODEM INITIALIZATION: Enter the desired command strings for initializing the modem for incoming and outgoing calls in the text boxes. The current strings can be explained as follows:

CODE	MEANING
AT	Attention
Q0	Result codes sent (Ok, connect, ring, no carrier, error, or connect 1200)
H0	Hang up
X1	Use extended result codes
E0	Do not echo characters in command state
S0=0	Register 0 rings to answer

6.17 MODEM DIALING: To determine the signals that will be sent before dialing, enter the desired information in the Prefix text box. To determine the after-dialing signals, enter the information in the Suffix text box.

6.18 LOCK DTE BAUD RATE: This option is used for high-speed modems only. The DTE baud rate controls the communication between the CO line and the modem. Locking the DTE baud rate keeps the CO-to-modem rate the same while allowing the PC-to-modem baud rate to be adjusted. To lock the DTE baud rate, select the check box to place a check mark in it. To remove the check mark, select the box again.

6.19 USE DTR TO HANG UP MODEM: If this option is enabled, the DTR signal is dropped for 0.5 seconds when the programmer disconnects the remote modem connection (by pressing F6 or pressing ALT-S and then selecting "Disconnect From Remote System" from the pull-down menu). This hangs up the modem on the programming PC, not the system modem. It should be used only if the modem is having trouble disconnecting from the call and only on modems that are designed to disconnect in this manner.

6.20 MODEM RESPONSES: To determine the messages that will appear when the modem makes a connection or reaches a busy number, enter the desired text in the appropriate boxes.

6.21 DEFAULT: To return all values to default (as shown below), select the Default command button.

6.22 OK/CANCEL: When modem programming is complete, select the OK command button to save the changes. Or, to exit without saving changes, select the Cancel command button.

Modem Usage Programming	
Modem Initialization	Modem Responses
Incoming	Connect 1:
Outgoing	Connect 2:
	Busy 1:
	Busy 2:
Modem Dialing	
Prefix	<input type="button" value="Default"/>
Suffix	<input type="button" value="OK"/>
<input type="checkbox"/> Lock DTE Baud Rate	<input type="button" value="Cancel"/>
<input type="checkbox"/> Use DTR to Hang Up Modem	

Outgoing Remote Session Information

Modem Connection
 Direct Connection

COM Port: COM 1 Baud Rate

Description: _____

Phone: _____

Save Connect Cancel

Connecting A Modem Session

6.23 This window is used for making the modem connection. It can be reached by selecting Connect To Remote System from the System Services drop-down menu in the Inter-Tel logo screen header.

6.24 MODEM/DIRECT CONNECTION: Indicate whether this is a modem connection or a direct connection by selecting the appropriate option button. The black dot appears in the selected option.

6.25 COM 1 or COM 2: Indicate which COM port your PC is using for the RS-232-C connection by selecting the appropriate option button. The black dot appears in the selected option.

6.26 BAUD RATE: Indicate the baud rate at which your PC will be operating by selecting the Baud Rate drop-down list box and scrolling the highlight bar to the desired baud rate.

- *If using a modem*, select the rate that matches the baud rate of the modem extension that will be used.
- *If using a direct connection*, select the rate that matches the RS232 port.

6.27 LOCATION: For a modem connection, enter a name for the remote modem site in the Description text box.

6.28 PHONE: For a modem connection, enter the telephone number of the remote modem site in the Phone text box. Special characters can be included in the number if they are accepted by the modem. Refer to the user manual for your modem to determine the necessary characters.

6.29 SAVE: When the information appears as desired, select the Save command button. This replaces the default values with the new information so that you do not have to repeat this procedure each time you call this customer.

6.30 CANCEL: To exit without connecting a programming session, select the Cancel command button.

6.31 CONNECT: When the session information is correct, begin the programming session by selecting the Connect command button. A window appears as shown on the next page. The session information is automatically saved when you select Connect.

The screenshot shows a window titled "Outgoing Session" with a close button in the top-left corner. The window contains the following text fields: "Comm Port:", "Baud Rate:", "Connect Type:", "Location:", "Number:", and "Status:". At the bottom of the window, there are three buttons: "Skip", "Redial", and "Cancel".

6.32 This window shows the information as it was programmed in the window on the previous page, including the COM port, baud rate, modem/direct connection type, site description, and telephone number. The "Status" line changes to indicate that the PC is configuring the modem, dialing, waiting for a connection, and setting up a connection.

6.33 The command buttons allow the options of cancelling the connection or redialing the number if problems arise (the Skip button is used for Inter-Tel engineering purposes only). If the software is unable to communicate with the modem, select the Cancel com-

mand button and check the connection between the modem and the PC. Also verify that the modem is connected to the proper port. To try again, select the Redial command button.

6.34 When the connection is completed, the Inter-Tel logo screen appears. To begin the programming session, press the F3 key. Or, press ALT-P to view the System Programming pull-down menu and then select Database Programming by highlighting it (use the up or down arrow key, if necessary) and pressing RETURN. The Database Programming Menu appears.

6.35 If the modem connection is lost during the programming session, allow a minute for the modem to reset, then re-establish the call using the procedure given above. All changes that were saved by a system update before the connection was lost will be retained in the IVX500 System memory.

6.36 To disconnect from the remote programming session when the Inter-Tel logo screen is displayed, press F6 or press ALT-S and then select "Disconnect From Remote System" from the "System Services" pull-down menu.

E. PASSWORD

6.37 At the beginning of each programming session, the IVX500 System may prompt you for a password; enter the password, if one is required, and press RETURN. When the Database Programming Menu displays on the PC monitor screen, programming can then be completed as described in the following pages.

7. INTER-TEL LOGO WINDOW

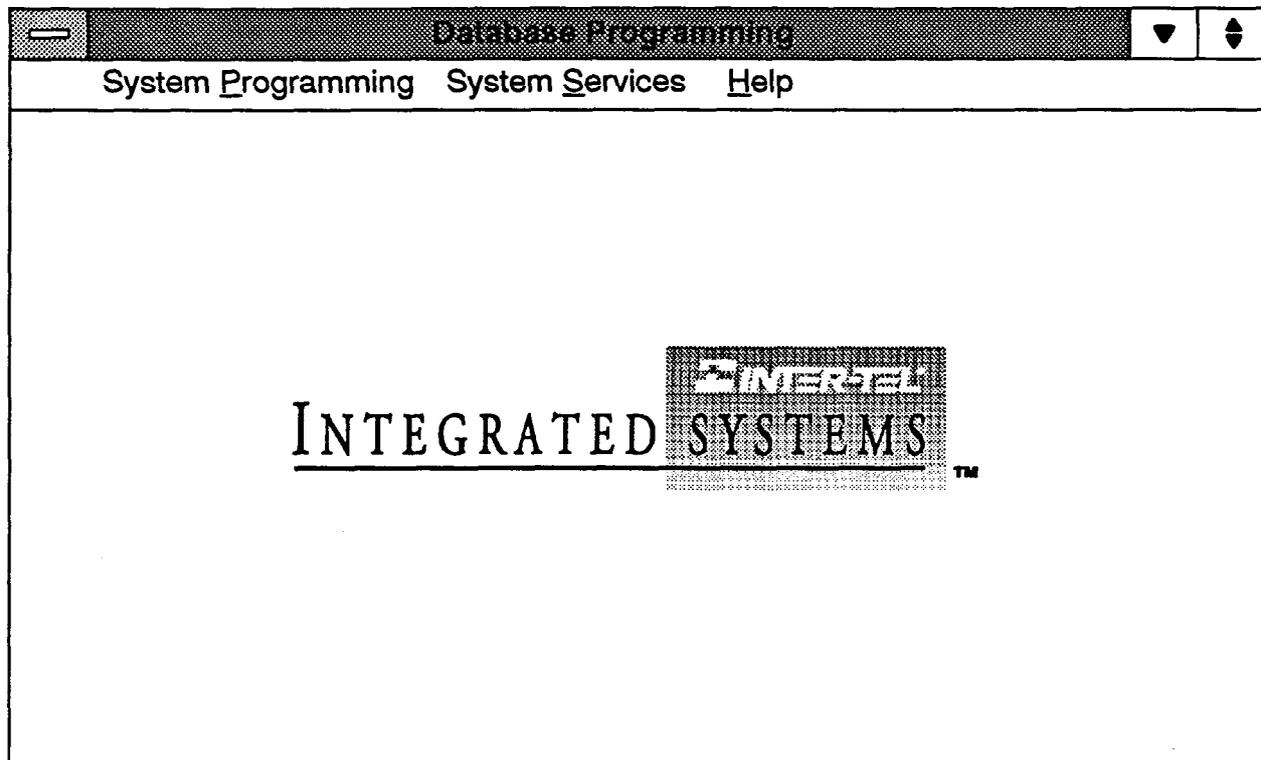
7.1 The logo window is the first window that is displayed in any programming session.

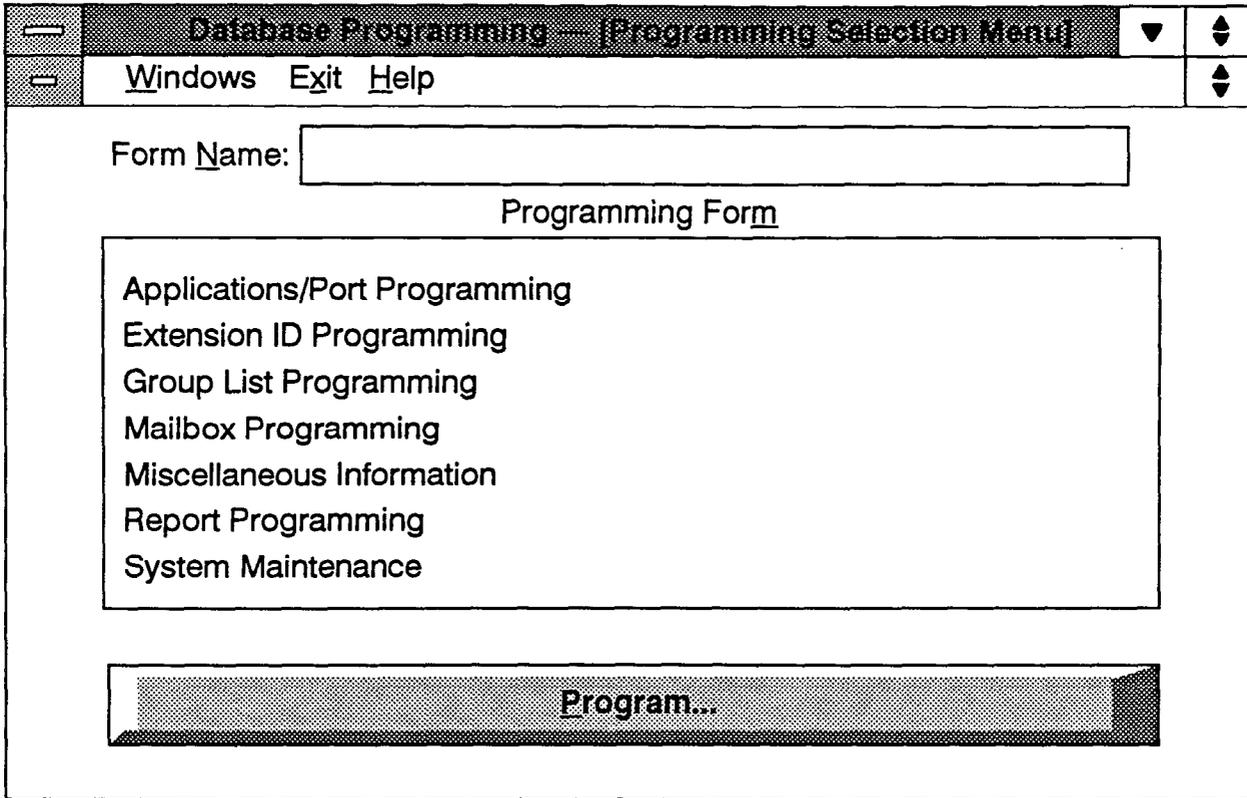
7.2 The window header contains three options: System Programming, System Service, and Help. These options allow access to drop-down menus and can be selected by pressing ALT and the underlined letter (P, S, or H). The processes performed by these options are as follows:

- **System Programming:** This drop-down menu includes Database Programming for beginning a programming session (described on page 3-10), On-Line Monitor Programming (reserved for future

use), and Modem Programming (described on page 3-11).

- **System Services:** This drop-down menu includes Connect To Remote System and Disconnect From Remote System options which are used for remote programming, as described on page 3-10.
- **Help:** The Help drop-down menu allows access to the on-line Help files, as described on page 3-6. This drop-down menu also includes an entry titled "About Database Programming" that, when selected, displays the software part number and generation date. If viewed after a remote programming session is started, it will also show the software version number.





8. DATABASE PROGRAMMING MENU WINDOW

8.1 The Database Programming Menu window shown above allows access to all other programming areas.

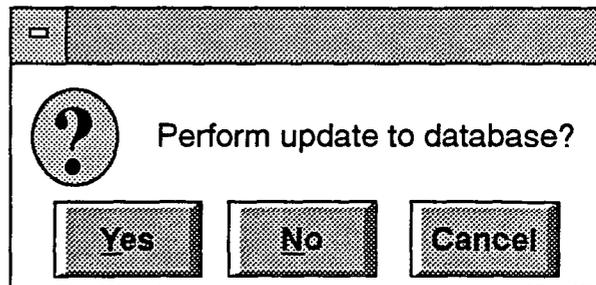
8.2 Each of the options is described in detail in this section. For information regarding the IVX500 System, its applications, and its features, refer to FEATURES.

A. WINDOW HEADER COMMANDS

8.3 The window header contains three options: Windows, Exit, and Help. The options can be selected by pressing ALT and the underlined letter (W, X, or H). The processes performed by these options are as follows:

- **Windows:** This drop-down menu is used for managing multiple windows and icons (refer to page 3-5).
- **Exit:** If any programming changes have been made, the following screen appears when Exit is selected from an application window header. It offers the options of saving the changes that were made in the associated window and exiting to the Database Programming Menu (select Yes), exiting to the Database Programming Menu without saving the changes (select No), or returning to the programming window to continue making changes (select Cancel). When selected from the Database Pro-

gramming Menu screen shown above, Exit will end the programming session.



8.4 **Help:** The Help drop-down menu allows access to the on-line Help files, as described on page 3-6. This drop-down menu also includes an entry titled "About Database Programming" that, when selected, displays the software part number and generation date. If viewed after a remote programming session is started, it will also show the software version number.

B. ACCESS TO PROGRAMMING AREAS

8.5 This window also provides access to all of the programming areas. The programming areas can be selected in two ways:

- **List box:** When a line in the list box is highlighted, that programming window can be viewed by select-

ing the Program command button or by selecting the highlighted line using the mouse.

- **Form Name:** Each of the programming windows can be selected directly by entering an abbreviated command in the Form Name text box. To select a

programming window, enter the appropriate command (listed below), or enter any portion of the words in the window name. For example, to reach the "Application/Port Programming" window, you can enter "APP," "PORT," "a p p," "app," etc.

PROGRAMMING AREA	ABBREVIATED CODE(S)	USED FOR
Applications/Port Programming	APP or PORT	Creates, programs, and deletes applications. Includes day/night greetings and digit translation. Programs ports to use applications or voice computer hunt group dial rules and/or place message notification calls. Also sets number of rings before answer for port.
Extension ID Programming	EXT or EXTID	Creates, programs, and deletes extension IDs. Determines number, description, and directory information.
Group List Programming	GROUP or GRP or GL	Creates, programs, and deletes group lists. Determines number, description, and group list members.
Mailbox Programming	MAIL or MB	Creates, programs, changes, and deletes mailboxes. Also used for batch creation of mailboxes and clearing mailbox messages. Determines all mailbox parameters including description, message notification station, mailbox type, remote messaging, and password.
Miscellaneous Information	MISC	<p>Programs parameters for the following:</p> <p><i>Automated Attendant:</i> Enables directory and determines sort order.</p> <p><i>Custom Recordings:</i> Programs descriptions.</p> <p><i>Disk Usage Statistics:</i> Shows disk statistics.</p> <p><i>Remote Notification Tables:</i> Programs description, pager notification strings, and outgoing access strings.</p> <p><i>Subscriber Summary Statistics:</i> Shows statistics related to system-wide mailbox operation.</p> <p><i>Telephone System Interface:</i> Selects telephone system type, enables Voice Talk, and programs feature codes used in telephone system.</p> <p><i>Timers:</i> Programs system timers.</p> <p><i>Voice Mail Information:</i> Determines system administrator mailbox, enables voice mail directory, determines directory sort order, and sets volume.</p>
Report Programming	REP	Prints reports that show system programming.
System Maintenance	SYS or MAINT	Sets date and time, day/night dial-0 destination, day mode parameters, programming port, and passwords. Also used for save/restore of database.

9. APPLICATIONS PROGRAMMING

9.1 Applications Programming is used for assigning extension numbers and other parameters to applications. Once the applications are programmed, they may be used by the telephone system as system forwarding paths, hunt group announcement/overflow stations, direct ring-in destinations, message centers, attendants, or alternate message source destinations. A program planning sheet is located in Figure 3-4, on page 3-68.

9.2 Applications can include the following (refer to FEATURES for more information regarding each application type):

- **Automated Attendant:** The automated attendant is a programmable feature that can be used to provide automated call answering service. Calls can be transferred, forwarded, or can directly ring in to an Automated Attendant application. When an automated attendant answers a call, it plays a recording that gives dialing instructions. After hearing the recording, the caller may then directly dial a station extension number, voice mail application number, or hunt group pilot number.
- **Automated Attendant Recall Destination:** If a call that was transferred by the Automated Attendant application is not answered before the Transfer timer expires, the call recalls the Automated Attendant Recall Destination application. The recall destination announces that the station is unavailable and allows the caller to choose to leave a message (if a mailbox is programmed for that station) or dial another extension number.
- **Call Routing Announcement:** A Call Routing Announcement application can be used in place of a playback device and/or for one-digit call routing. The playback device function is especially useful for programming hunt group announcement and overflow stations. When called, the Call Routing Announcement application will play a recording and then hang up. As an option, the Call Routing Announcement application can use Digit Translation which allows the caller to press a single digit for access to a mailbox, the voice mail subscriber application, the operator, the directory, or to a station or hunt group that has an associated mailbox or extension ID.
- **Quick Message Retrieval:** Only one Quick Message Retrieval application may be created for the system. It is usually programmed as the alternate message source for the Non-Subscriber Voice Mail ports. If so, when station users respond to message

indications left by the voice mail ports, they are prompted only for their password.

- **Non-Subscriber Voice Mail:** This application handles all calls that are directed to voice mail (other than Quick Message Retrieval) placed by subscribers and non-subscribers. Callers will hear the main company greeting, followed by a menu of available options. In telephone systems with voice computer hunt groups, internal callers will hear only the menu of options, and not the company greeting. Stations can forward or transfer calls directly to their mailbox using this application's extension number. This application can also be the message center for the subscribers' stations.

9.3 Up to 25 applications can be programmed (however, there can be only one Quick Message Retrieval application). In the default database, extension numbers 275-299 are reserved for applications, but any available extension number can be used.

9.4 Programmable application parameters include the following:

- **Description:** The description for an application appears wherever the application is listed in the database, as well as in the system directory.
- **Day/night greetings:** (Not used for automated attendant recall and quick message retrieval applications.) When the application is called, a Custom Recording (made using the System Administrator's mailbox, as described in FEATURES, page 2-18.) will play. You can select any Custom Greeting Number for the Day and/or Night Greeting. The Day message is played when the system is in day mode and the night message is played during night mode. (Recording 01, by default, contains the Voice Mail standard company greeting. Recording 02, by default, contains the system-provided Auto Attendant company greeting.)
- **Digit translation:** (Call Routing Announcement applications only.) Digit translation allows callers to dial a single digit to select a designated extension number, mailbox, the voice mail subscriber application, the operator, the directory, or hunt group pilot number. Up to 12 digit translation storage locations (*, #, 0-9) are available for each Call Routing Announcement application. **NOTE:** Digit translation is not recommended when the application will be used as a hunt group announcement or overflow station on telephone systems in which the hunt group calls can be pulled away from the announcement/overflow station when a hunt group member becomes available. For an alternate method of using digit

translation in hunt groups, refer to the manual for your telephone system.

9.5 Port programming is also performed in this programming area. The parameters that can be established for each port include the following:

- **Port Operation:** This determines how the port will be used. Possible port operations include the following:

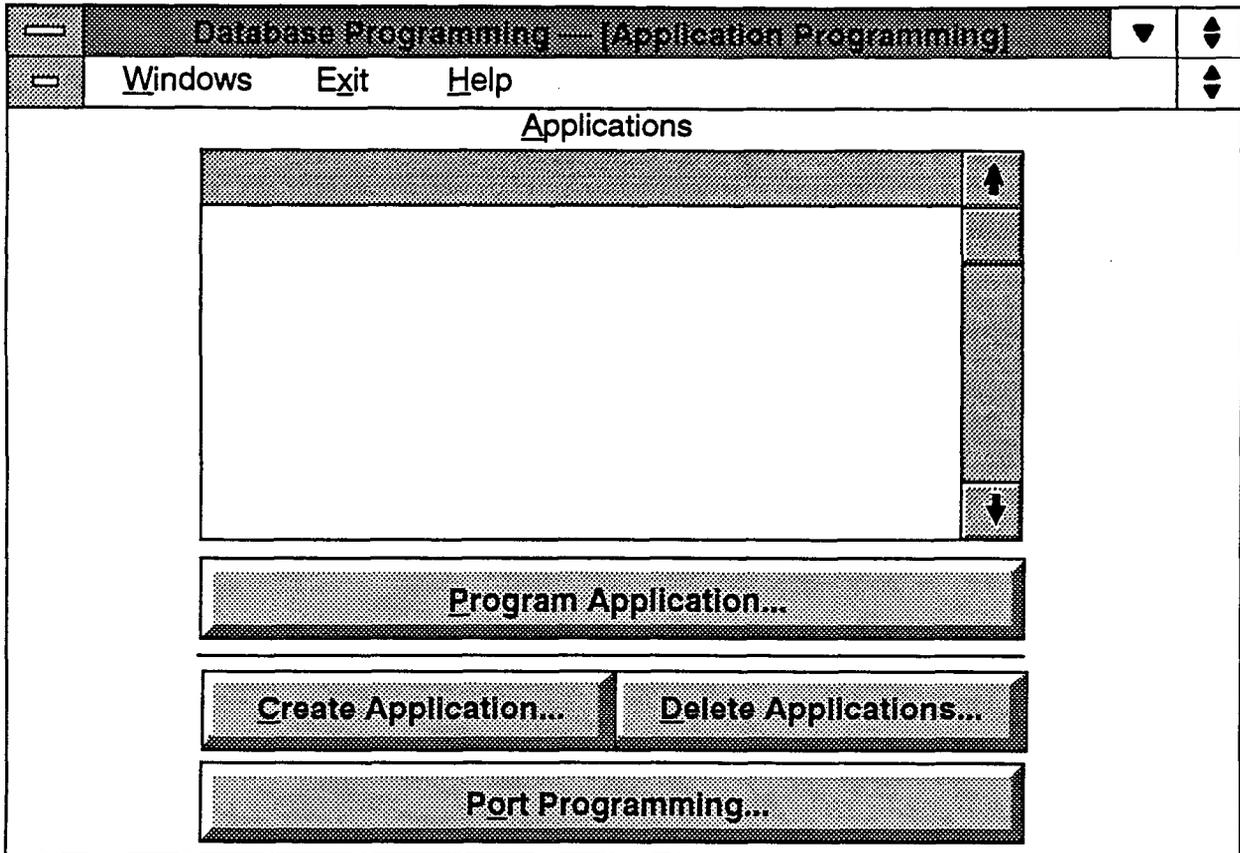
- *Application:* (Used for telephone systems without voice computer hunt groups.) The list includes all programmed applications (description and extension number). If a port is assigned to an application, the type of application will determine the operation of the port.

- *Voice Computer Hunt Group:* (For use with telephone systems with voice computer hunt groups only.) This port operation assignment indicates that the port is a member of a voice computer hunt group on the telephone system. Its opera-

tion is controlled by the commands sent from the telephone system. Refer to the APPLICATION AND TELEPHONE SYSTEM SETUP section for detailed explanations of the dial rules needed to control these ports.

- *None:* This assignment is for unused ports.

- **Remote Message/Lamp Notification:** If remote messaging/lamp notification is enabled, the system will be allowed to use the port to place outgoing calls for remote messaging and message waiting lamp/notification purposes. (NOTE: Ensure that ports with this option enabled have outgoing access for trunks in the telephone system, if they will be used for remote notification to outside numbers.)
- **Number Of Rings Before Answer:** This parameter indicates the number of ring cycles the system must detect before it will answer a call on this port. By default, it is set to one ring cycle. The allowed range is 1-10 cycles.



9.6 The window shown above appears when Applications Programming is selected from the programming options or the APP or PORT abbreviated command is entered. It is used for creating, programming, and deleting applications and for programming individual ports.

9.7 APPLICATIONS: The Applications list box shows the currently programmed applications, if any. When an application is highlighted, you can use the Program Application command button to program it.

9.8 PROGRAM APPLICATION: To program an existing application, highlight it in the Applications list box and select the Program Application command button. A window appears as shown on page 3-21.

9.9 CREATE APPLICATION: To create a new application, select the Create Application command button. A window appears as shown on page 3-20. This command button cannot be selected if 25 applications have already been programmed.

9.10 DELETE APPLICATIONS: To remove one or more applications from the Applications list box, select the Delete Application command button. A window appears as shown on page 3-24.

9.11 PORT PROGRAMMING: A window appears as shown on page 3-25.

Create Application

Extension:

Application Type

Auto Attendant

Auto Attendant Recall

Call Routing Announcement

Quick Message Retrieval

Non-subscriber Voice Mail

A. CREATING APPLICATIONS

9.12 The window shown above appears when the Create Application command button is selected. To create a new application, follow these procedures:

9.13 EXTENSION: An available extension number is displayed in the Extension text box. To change the ex-

ension number for the application, type the desired extension in the text box. The number can have up to 5 digits, but cannot begin with 0. (If you attempt to enter an invalid extension number or a number that is already assigned, you will see a warning window. Select OK to continue and then select a valid extension number.) **NOTE:** This is *not* the extension number that telephone system users dial to reach the application. They use the telephone system extension numbers or hunt group pilot numbers assigned to the single-line circuits that are connected to the IVX500. This is number applies only within the IVX500 to identify the application. It is also used in voice computer hunt group dial rules to select the application (see page 4-4 in APPLICATION & TELEPHONE SYSTEM SETUP).

9.14 APPLICATION TYPE: Select the type of application by selecting the desired option button. A dot in the center of the option button indicates the selected application. (Only one Quick Message Retrieval application can be programmed per system. Once it has been assigned, that option button is dimmed and cannot be selected.)

9.15 OK: When the application has an extension number and an application type, select the OK command button. The programming window shown below appears. Enter the information for the new application as described below.

9.16 CANCEL: To exit without creating the new application, select the Cancel command button.

B. PROGRAMMING AN APPLICATION

9.17 The window shown below appears when the Program Application Command button is selected. Program the application parameters as follows.

9.18 DESCRIPTION: Enter a name, of up to 20 characters, in the Description text box. Do not use Control characters.

9.19 DAY/NIGHT GREETING: *(Not used for automated attendant recall and quick message retrieval applications.)* Determine the number of the Custom Recording that will be played when this application is

called. To program the recording number select the Day Greeting or Night Greeting drop-down list box and scroll the highlight bar to the desired recording number.

9.20 DIGIT TRANSLATION: *(This is available in Call Routing Announcement applications only.)* To program Digit Translation, select this command button. A window appears as shown on the next page.

9.21 OK/CANCEL: When all programming is completed for the application, select the OK command button. Or, to exit without changing any application parameters, select the Cancel command button.

The screenshot shows a graphical user interface window for programming an application. The title bar reads "(Application Name) Ext: XXX". The main area is divided into several sections: a "Description" label above a large text input field; two rows of labels "Day Greeting:" and "Night Greeting:" each followed by a dropdown menu currently displaying "Recording XX"; and a "Digit Translation..." button on the right. At the bottom right, there are two buttons labeled "OK" and "Cancel".

Input	Action
#	Company Directory - First Name
*	Company Directory - Last Name
0	Transfer To Operator
1	Subscriber Access
2	Transfer To Collected Extension
3	Transfer To Mailbox XXX
4	Transfer To Extension XXX
5	Invalid
6	Invalid
7	Invalid

Program...

OK Cancel

9.22 INPUT/ACTION: The list box shows the digit translation table for the Call Routing Announcement application being programmed. The Input is the digit that the caller presses. The Action is what occurs when that digit is pressed. Timeout is the input that represents no digits being entered. The Actions that can be selected for the digits (*, #, 0-9) and for the Timeout option are:

- *Transfer To Operator:* This action transfers the call to the Dial-0 Destination that is programmed in the System Maintenance window, shown on page 3-63.
- *Company Directory - First Name:* This sends the caller to the directory prompt that asks the caller to enter the first name of the desired party.
- *Company Directory - Last Name:* This sends the caller to the directory prompt that asks the caller to enter the last name of the desired party.
- *Subscriber Access:* This sends the caller to the mailbox prompt that requests a mailbox number.
- *Invalid:* The digit will not be used. Callers who press this digit hear a recording that tells them that it is invalid.
- *Transfer To Extension:* This action sends the call to the designated extension (station, hunt group, or application).
- *Transfer To Mailbox:* This sends the call to the designated mailbox. (This will not appear if there are no programmed mailboxes.)
- *Transfer To Collected Extension:* To allow callers to dial extension numbers of stations and hunt groups that have a mailbox or extension ID, use this Action for digits that correspond to the first digits of extension numbers. For example, if digit 1 is "Transfer To Collected Extension," callers can dial extension numbers that begin with 1. However, if digit 1 is "Transfer to extension 2000," a caller attempting to dial a station extension number that begins with 1 will instead be transferred to 2000.
- *Hang Up:* (This action is used for Timeout only.) This disconnects from the call if the user does not enter a digit.

9.23 PROGRAM: To program a digit (#, *, 0-9) or Timeout, highlight it in the list box and then select the Program command button. The window shown on the next page appears.

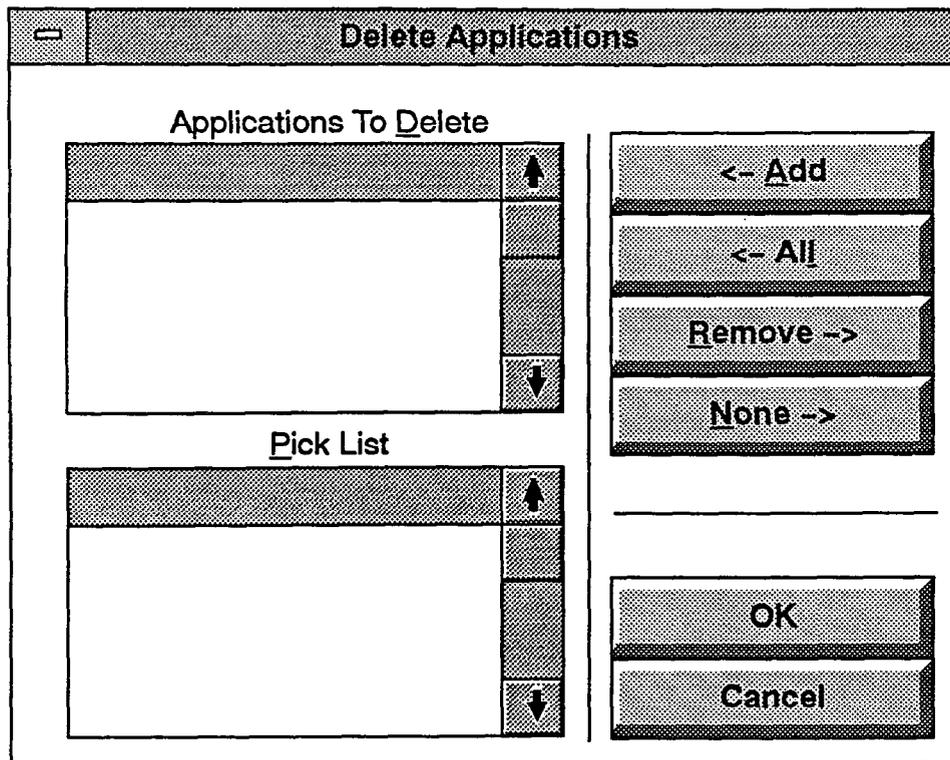
9.24 OK/CANCEL: When the digit translation table is complete, select OK to return to the window shown on the previous page, or select Cancel to exit without saving any changes.

9.25 For Digits: The window shown above appears when you select the Program command button while a digit is highlighted.

- **ACTION:** Scroll through the drop-down list box to the desired Action for the digit being programmed. **NOTE:** If you select Transfer To Operator and there is not a programmed Operator Access Dial-0 Destination in System Maintenance window (see page 3-63), you will see a warning message. Go to that window and program the Operator Access Destinations.
- **TRANSFER DESTINATION:** If the Action is "Transfer To Mailbox," scroll through the Mailbox drop-down list box to select the desired destination. If the Action is "Transfer To Extension," enter the desired extension number in the Extension text box.
- **OK/CANCEL:** When finished, select OK to return to the window shown on the previous page. Or select Cancel to exit without saving changes.

9.26 For Timeout: The window shown above appears when you select the Program command button while Timeout is highlighted.

- **ACTION:** Scroll through the drop-down list box to the desired Action for the digit being programmed. **NOTE:** If you select Transfer To Operator and there is not a programmed Operator Access Dial-0 Destination in System Maintenance window (see page 3-63), you will see a warning message. Go to that window and program the Operator Access Destinations.
- **TRANSFER DESTINATION:** If the Action is "Transfer To Extension" or "Transfer To Mailbox," scroll through the Transfer Destination drop-down list box to select the desired destination.
- **TIMEOUT TIMER:** Scroll through the Timeout Timer drop-down list box to the desired timer value (0-60). This determines how long the application will wait, after the recording has played, for input from the caller before the Timeout Action is taken. (Because there are no default digit translations, this timer defaults to zero to prevent the delay in call processing that would occur while the system waited for a digit to be entered.)
- **OK/CANCEL:** When finished, select OK to return to the window shown on the previous page. Or select Cancel to exit without saving changes.



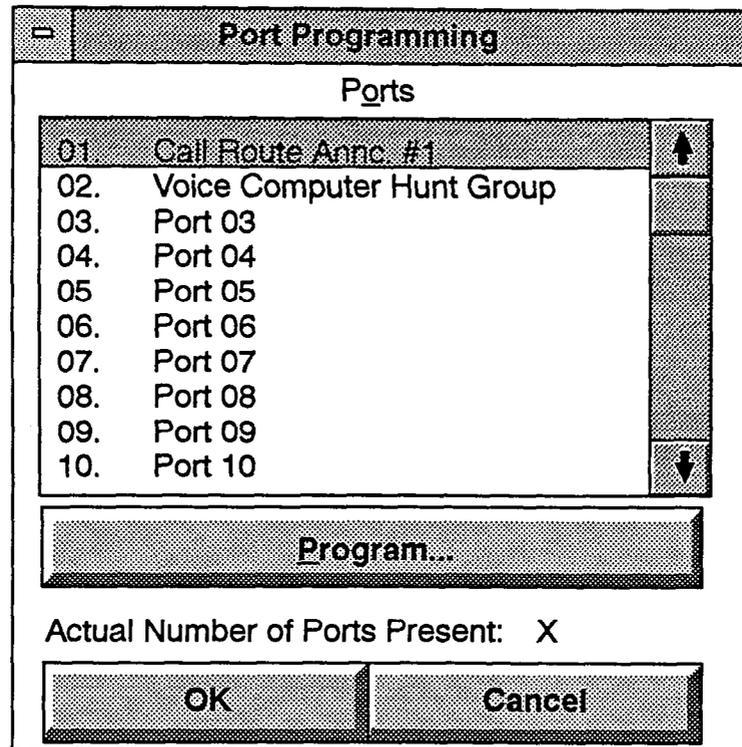
C. DELETING APPLICATIONS

9.27 The window shown above appears when the Delete Applications command button is selected. To determine the applications that will be deleted, use the following procedure:

- **ADD/ALL:** Use the Add command button to move the highlighted application from the Pick List to the Applications To Delete list, or use the All command button to place all applications in the list.
- **REMOVE/NONE:** To remove an application from the Applications To Delete list, highlight it and se-

lect the Remove command button. Or, to remove all applications, use the None command button.

- **OK:** When the Include List appears as desired, select the OK command button. A window appears that asks you to verify that you want the applications deleted. To delete them, select Yes. To leave them unchanged, select No. *If a Custom Recording had been assigned to the deleted application, the recording is not erased and any assignment of the recording to another application is unaffected.*
- **CANCEL:** To exit without deleting any applications, select the Cancel command button.



D. PORT PROGRAMMING

9.28 This window lists of all ports on the system by port number and description. To reach this window, select the Port Programming command button shown on page 3-19. Port programming is performed as follows.

9.29 ACTUAL NUMBER OF PORTS PRESENT: The list box shows 16 ports. However, your system may not have all 16 ports installed. The Actual Number of Ports Present is a reference that tells you how many ports you have on your system. If you attempt to program a port that does not exist on your system, you will see a warning box that indicates that the port is not physically

installed. You can, however, program the non-existent port. (This is useful when programming is performed on one system and the database is then transferred to a larger system using Save and Restore.)

9.30 PORTS: To program a port, highlight it in the list box and select the Program command button. The window shown on the next page appears.

9.31 OK/CANCEL: When port programming is complete, select the OK command button to exit. Or select the Cancel command button to exit without saving any changes.

Port XX Configuration

Port Operation

None

Remote Messaging/Lamp Notification

Number of Rings Before Answer (Range : 1-10)

Day Mode: 1 Night Mode: 1

Default (1) Default (1)

OK Cancel

9.32 Each port is programmed separately using this window. It is displayed when you highlight a port and select the Program command button shown on the preceding page.

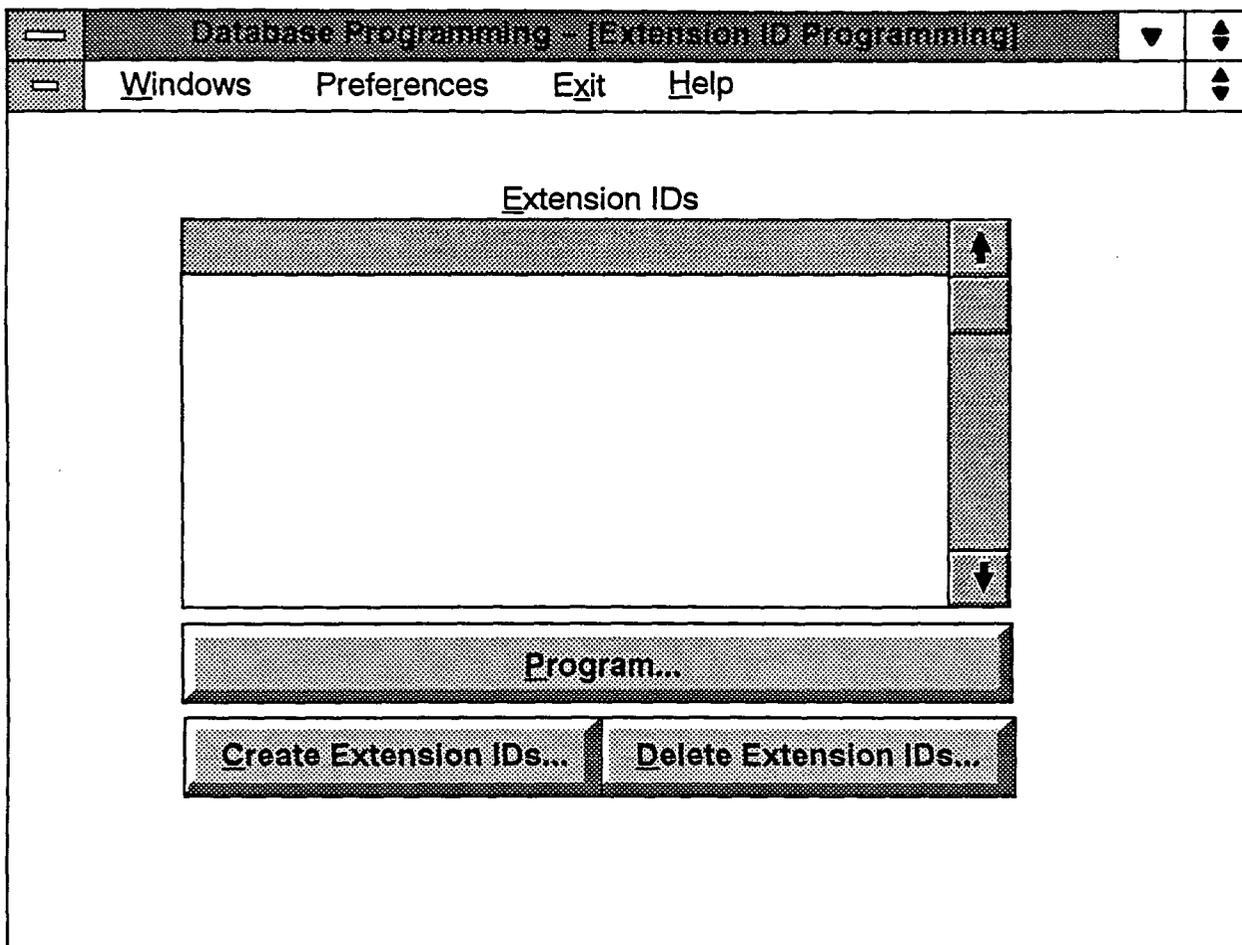
9.33 PORT OPERATION: This drop-down list box allows you to select the port operation. Possible port operations include the following:

- **Applications:** (*Used for telephone systems without voice computer hunt groups.*) The list includes all programmed applications. If a port is assigned to an application, the type of application will determine the operation of the port.
- **Voice Computer Hunt Group:** (*For use with telephone systems with voice computer hunt groups only.*) This port operation assignment indicates that the port is a member of a voice computer hunt group on the telephone system. Its operation is controlled by the commands sent from the telephone system. Refer to the APPLICATION AND TELEPHONE SYSTEM SETUP section for detailed explanations of the dial rules needed to control these ports.
- **None:** This assignment is for unused ports.

9.34 REMOTE MESSAGING/LAMP NOTIFICATION: If remote messaging/lamp notification is enabled, the system will be allowed to use this port to place outgoing calls for remote messaging to pagers and personal number, and for message waiting lamp/notification to the stations in the telephone system. To enable this option, select the check box to place a check mark in it. To remove the check mark, select the box again. (NOTE: Ensure that ports with this option enabled have outgoing access for trunks in the telephone system, if they will be used for remote notification to outside numbers.)

9.35 NUMBER OF RINGS BEFORE ANSWER: This parameter indicates the number of ring cycles the system must detect before it will answer a call on this port. By default, it is set to one ring cycle. The allowed range is 1-10 cycles. Enter the desired values in the Day Mode and Night Mode text boxes. To return either value to default, select the Default command button below the appropriate text box.

9.36 OK/CANCEL: When the port is programmed as required, select the OK command button to exit. Or, to exit without saving changes, select the Cancel Command button.



10. EXTENSION ID PROGRAMMING

10.1 Extension IDs provide the Auto Attendant application a means for transferring calls to extensions which do not have mailboxes. An extension ID allows the user to record a name for the automated attendant directory and establish a password. Extension IDs can be created for stations, hunt groups, and applications. A program planning sheet for this window appears in Figure 3-5, on page 3-70.

10.2 **EXTENSION IDS:** This list box shows the existing extension IDs. When an ID is highlighted in this

list box, you can program directory information and a password for it.

10.3 **PROGRAM:** To program a password and the directory information for an extension ID, select the Program command button. The window shown on the next page appears.

10.4 **CREATE EXTENSION IDS:** To add extension IDs, select the Create Extension IDs command button. A window appears as shown on page 3-29.

10.5 **DELETE EXTENSION IDS:** To delete extension IDs, select the Delete Extension IDs command button. A window appears as shown on page 3-30.

Ext ID: XXX

Description

Directory Information

Unlisted Number

Private Extension

Password...

OK Cancel

A. PROGRAMMING AN EXTENSION ID

10.6 The window shown above appears when you highlight an extension ID and select the Program command button shown on the preceding page. Use the following procedures for programming the extension ID:

10.7 DESCRIPTION: If desired, enter a name for the extension ID in the Description text box. The description can be up to 20 characters in length. If the extension ID is associated with an application, the application's description is shown in the text box and cannot be changed in this window; the description can only be changed in Application programming as shown on the bottom of page 3-21.

10.8 DIRECTORY INFORMATION: Select the desired option to place a check mark in its associated check box. Unlisted numbers are not included in the directory, but can be dialed if the caller knows the extension number. Private numbers can be dialed, but only the name is played in the directory.

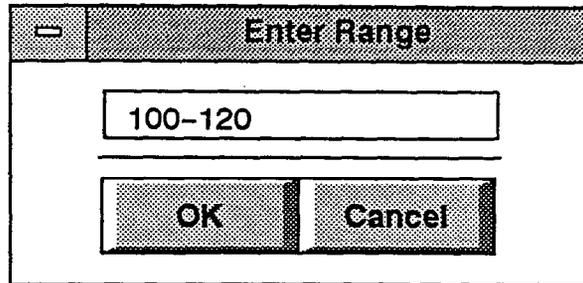
10.9 PASSWORD: To program a password for the Extension ID, select this command button. A window

appears as shown below. Enter a password (up to 12 digits, using digits 0-9). The digits will not appear on the screen when typed; they will appear as asterisks (***) . Then select the OK command button. The window heading will change to "Password Validation" and you must retype the password exactly as before. If the entered passwords match, you will return to the Password window, if not, you must re-enter the new password and verify it again. If you make a mistake while entering the password or wish to leave it unchanged, select Cancel.

Password Entry — Ext ID: XXX

OK Cancel

10.10 OK/CANCEL: When finished programming the extension ID, select OK. Or to exit without changing the information, select Cancel.



B. CREATING EXTENSION IDS

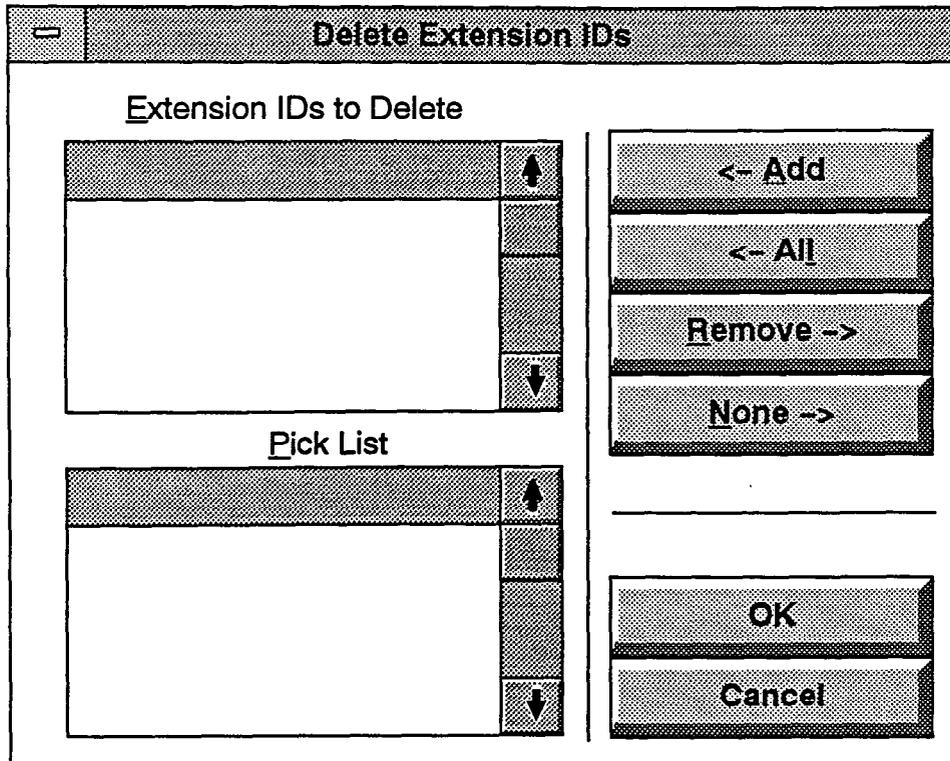
10.11 The window shown above appears when the Create Extension IDs command button is selected. To determine the stations that will have assigned extension IDs, use the following procedure:

10.12 ENTER RANGE: To create extension IDs for one or more stations, enter a single extension number or a range of extension numbers. When entering a range, enter the lower extension number, a dash, and then the higher extension number as shown above. Extension numbers can have 1-5 digits, but cannot begin with 0.

10.13 OK: When you have entered the desired range, select the OK command button to return to the Extension ID Programming window. If the selected range is valid, a window will appear that asks you to confirm your request to create extension ID. Select Yes to continue or No to exit without creating the IDs. If the selected range is invalid or conflicts with other extensions, you will see one of the following messages:

- *If you enter an invalid extension number, you will see a warning message explaining the conflict. Select the OK command button in the warning window to continue.*
- *If the range you entered includes numbers that were previously assigned to extension IDs, mailboxes, or group lists, the conflicts are displayed. You can choose to abort the process and return to the Enter Range text box by selecting the Abort Batch Create command button in the warning window. Or, you can choose to override the conflicts and change the existing numbers into new extension IDs by selecting the Ignore Conflicts command button. NOTE: This warning will not appear if any of the selected extension ID numbers correspond to application extension numbers. Applications can have associated extension IDs.*

10.14 CANCEL: To exit from this window without creating any new extension IDs, select the Cancel command button.



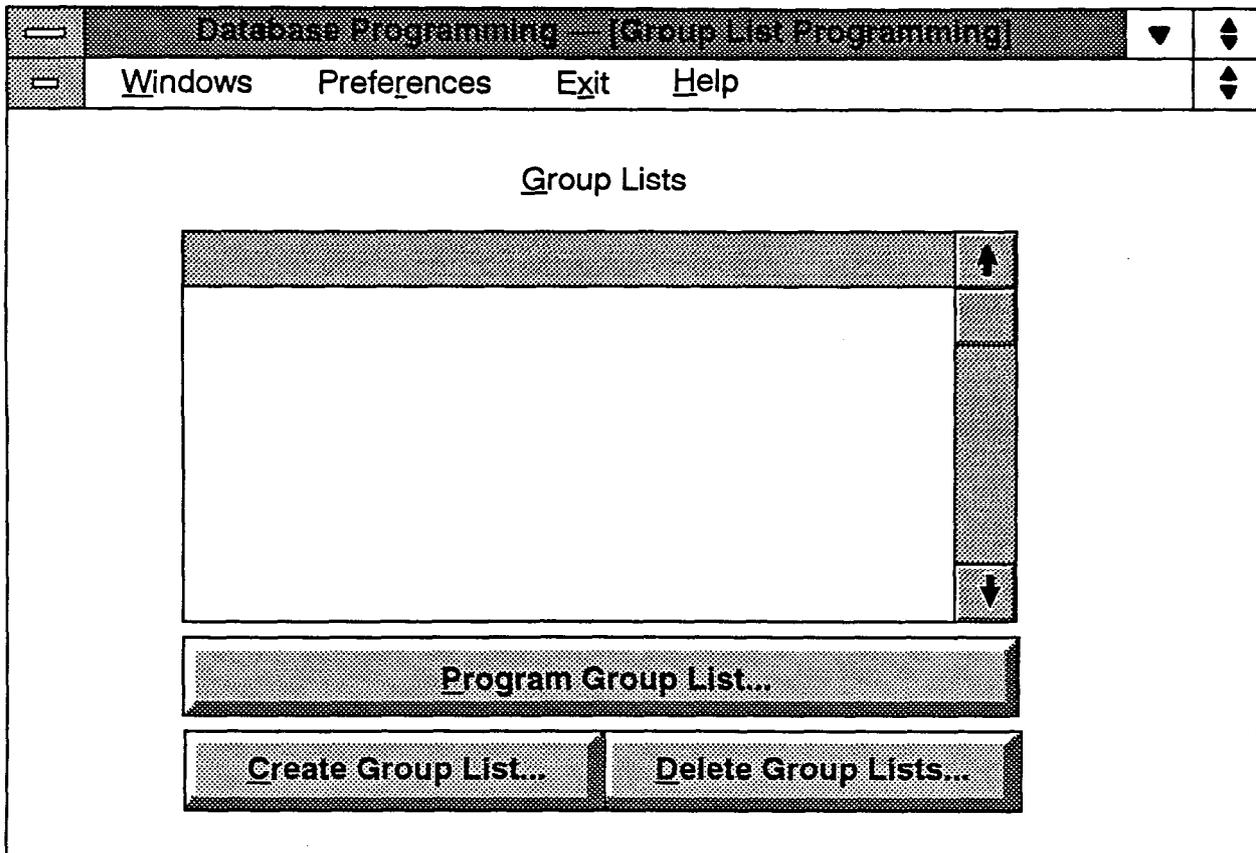
C. DELETING EXTENSION IDS

10.15 The window shown above appears when the Delete Extension IDs command button is selected. To determine the extension IDs to be deleted, use the following procedure:

- **ADD/ALL:** Use the Add command button to move the highlighted extension ID from the Pick List to the Extension IDs To Delete list, or use the All command button to place all IDs in the list.
- **REMOVE/NONE:** To remove an ID from the Extension IDs To Delete List, highlight it and select the

Remove command button. Or, to remove all IDs, use the None command button.

- **OK:** When the Extension IDs To Delete list appears as desired, select the OK command button. A window appears that tells you that you are about to delete extension IDs for the selected devices, and asks if you wish to continue. Select Yes to continue, or No to leave the IDs unchanged.
- **CANCEL:** To exit without changing the lists, select the Cancel command button.



11. GROUP LISTS

11.1 This window is used for programming Voice Mail group lists. Group lists can be used by any Subscriber for sending messages to several mailboxes simultaneously. The parameters for programming group lists include the following:

- Group list description
- Group list number
- Mailboxes included in the list

11.2 A program planning sheet is located in Figure 3-6, on page 3-71.

11.3 **PROGRAMGROUPLIST:** To program the parameters for a group list, highlight it in the Group Lists box and select the Program Group List command button. A window appears as shown on the next page.

11.4 **CREATE GROUP LIST:** When the Create Group List command button is selected, a window appears as shown on the next page. *If the maximum number of group lists have already been programmed,* a warning shows you that "You have already programmed the maximum number of group lists allowed." Select the OK command button to return to the window shown above.

11.5 **DELETE GROUP LISTS:** To delete a group list, select the Delete Group List command button. A window appears as shown on page 3-34.

The image shows a graphical user interface dialog box. At the top is a title bar with a minus sign on the left. Below the title bar, the word "Description" is centered above a rectangular text input field. Underneath this, the text "Group List Number" is positioned above another rectangular text input field. To the right of the "Group List Number" field is a button labeled "OK". Below the "Group List Number" field is a button labeled "List Members...". To the right of the "List Members..." button is a button labeled "Cancel".

11.6 DESCRIPTION: Enter a name for the group list, up to 20 characters, in the Description text box. Do not use Control characters.

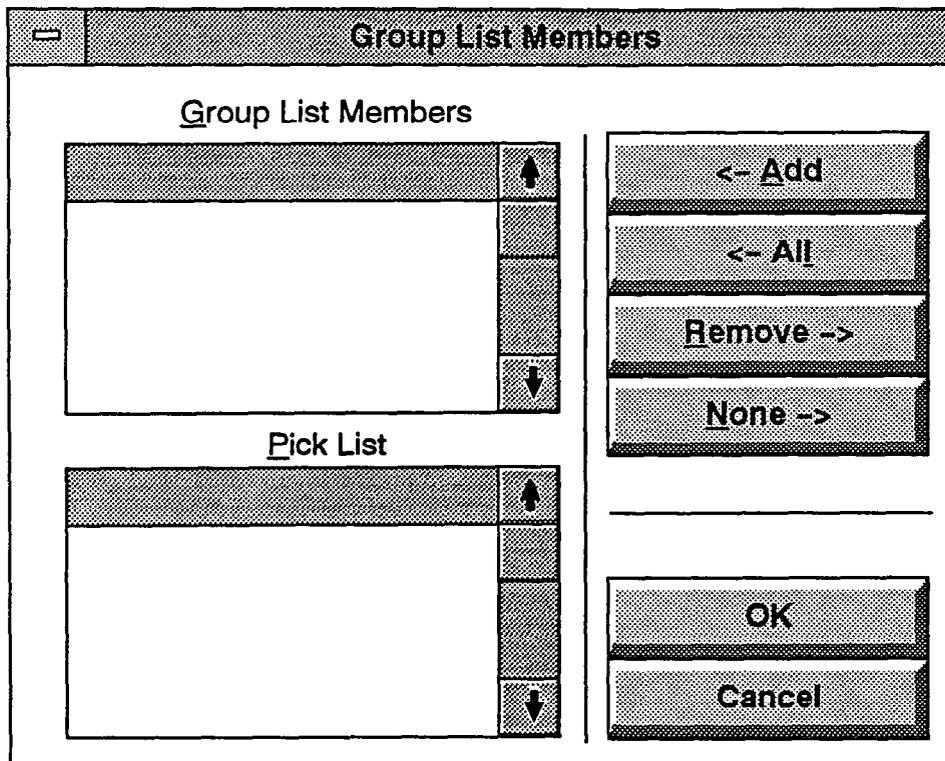
11.7 GROUP LIST NUMBER: Enter the desired number in the text box. (If you attempt to enter an invalid number, a number that begins with 0, or a number that is already assigned, you will see a warning window. Select OK to continue and then select a valid number.)

11.8 LIST MEMBERS: To determine the mailboxes that will be included in the group list, select the List

Members command button. The window shown on the next page appears.

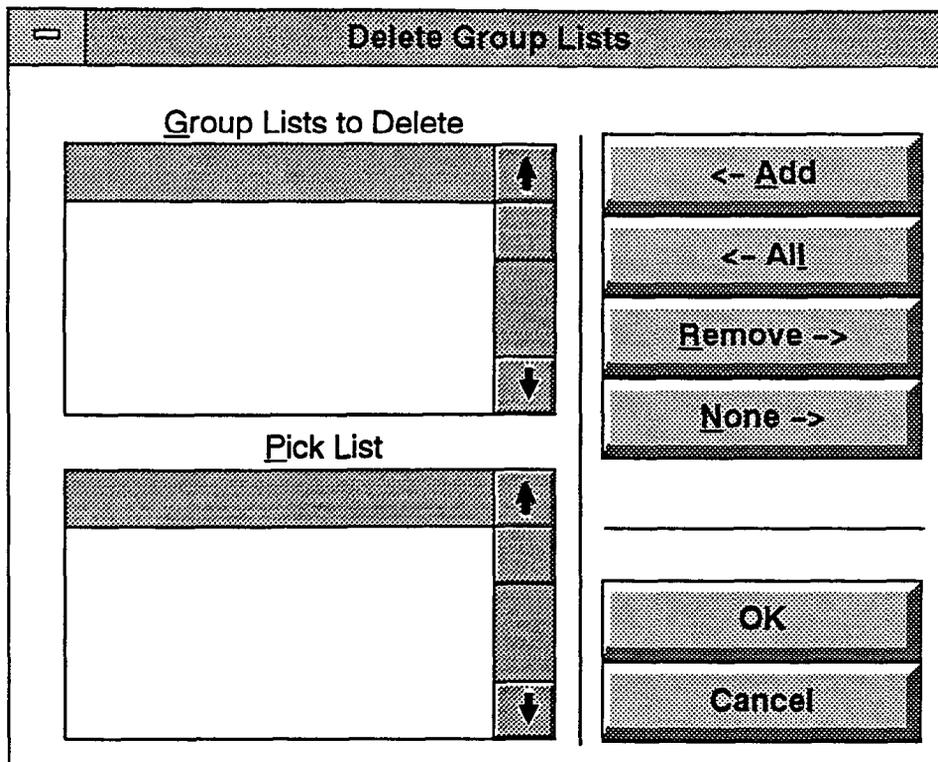
11.9 OK: When finished programming the group list, select the OK command button. If you did not assign mailboxes to this group list, you will receive a warning that says, "This group list does not contain any mailboxes. Is this correct? Select Yes to continue, or select No to return to the window shown above.

11.10 CANCEL: To exit without changing the group list, select the Cancel command button.



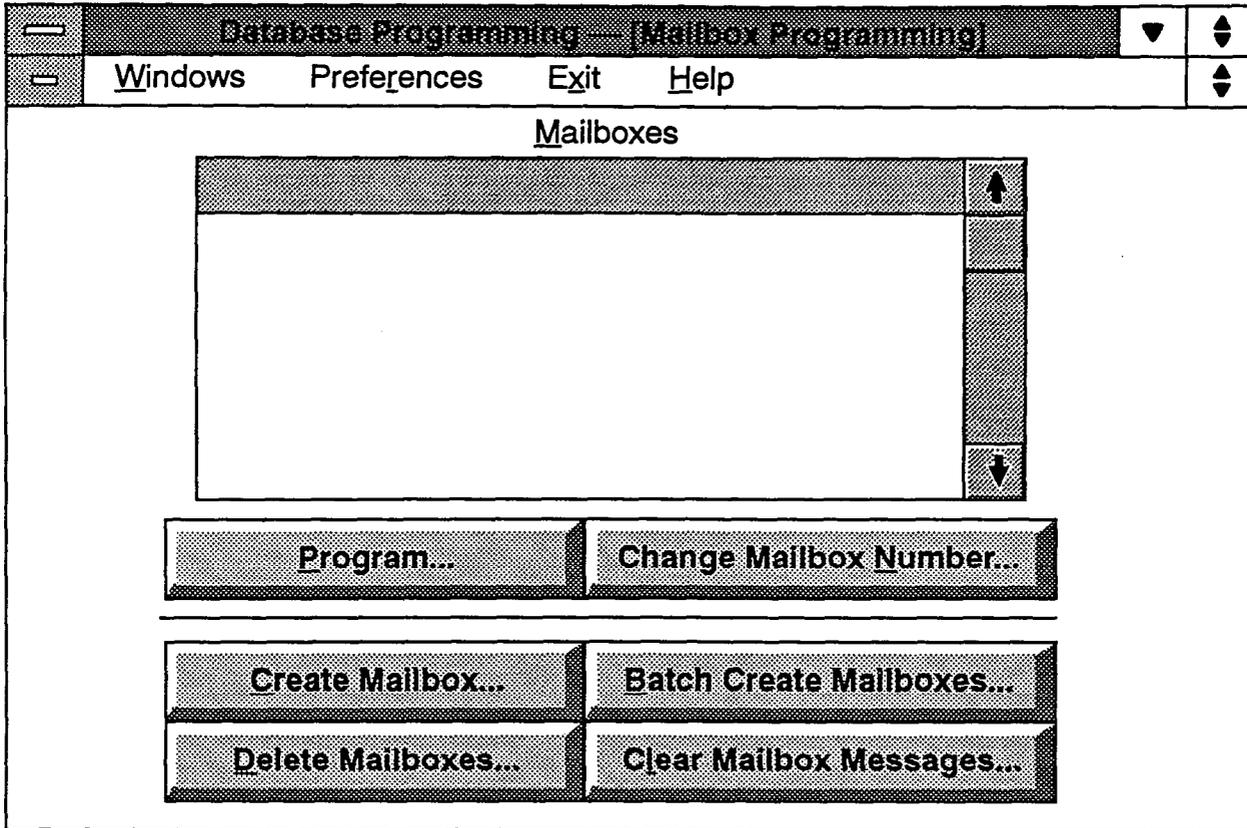
11.11 The window shown above appears when the List Members command button is selected. To determine the mailboxes that will be included in the list, use the following procedure:

- **ADD/ALL:** Use the Add command button to move the highlighted mailbox from the Exclude list to the Include List, or use the All command button to place all stations in the list.
- **REMOVE/NONE:** To remove a mailbox from the Include list, highlight it and select the Remove command button. Or, to remove all mailboxes, use the None command button.
- **OK:** When the Include List appears as desired, select the OK command button. If you attempt to add more mailboxes to a group than the system allows, a warning appears, telling you that "The system allows only xxx mailboxes per group list. You currently have yyy mailboxes selected. Please remove zzz mailboxes from the group list." Select OK to return to the window shown above and reprogram the group list.
- **CANCEL:** To exit without changing the lists, select the Cancel command button.



11.12 The window shown above appears when the Delete Group Lists command button is selected. To determine the group lists that will be deleted, use the following procedure:

- **ADD/ALL:** Use the Add command button to move the highlighted group list from the Pick List to the Groups Lists To Delete list, or use the All command button to place all group lists in the list.
- **REMOVE/NONE:** To remove a group list from the Groups To Delete List, highlight it and select the Remove command button. Or, to remove all group lists, use the None command button.
- **OK/CANCEL:** When the Include List appears as desired, select the OK command button. (A window appears that tells you that, "You are about to create delete group lists. Do you wish to continue?" Select Yes to continue, or No to leave the group lists unchanged.) To exit without changing the lists, select the Cancel command button.



12. MAILBOX PROGRAMMING

12.1 A mailbox is a storage location on the hard disk which stores all messages that have been directed to it. A program planning sheet for this window is located in Figure 3-7, on page 3-72.

12.2 MAILBOXES/PROGRAM: The list box shows all existing mailboxes. To program a mailbox, highlight it and then select the Program command button. A window appears as on page 3-39.

12.3 CREATE MAILBOX/CHANGE MAILBOX NUMBER: To create a mailbox, select Create Mailbox. To change an existing mailbox number, highlight it and select Change Mailbox Number. The window shown on the next page appears.

NOTE: If you create a mailbox for an extension that currently has an extension ID, the system converts the

ID into a mailbox and eliminates the ID. If already initialized, the password and recorded name for the extension ID are retained and transferred over to the mailbox and the subscriber does not need to re-initialize.

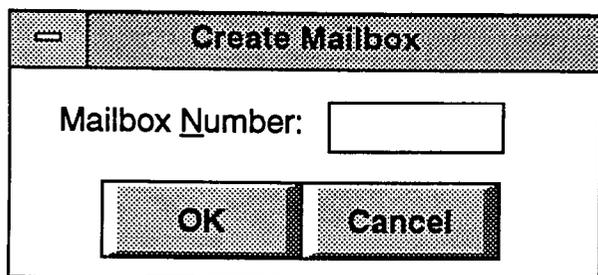
12.4 BATCH CREATE MAILBOX: To create several mailboxes simultaneously, select the Batch Create Mailboxes command button. An "Enter Range" window appears, as shown on page 3-36.

12.5 DELETE MAILBOXES: To delete one or more mailboxes from the system, select the Delete Mailboxes command button. A window appears, as shown on page 3-37.

12.6 CLEAR MAILBOX MESSAGES: (Cannot be used in stand-alone programming.) To erase existing mailbox messages, select the Clear Mailbox Messages command button. The window on page 3-38 appears.

A. CREATING OR CHANGING A MAILBOX NUMBER

12.7 The following window appears when the Create Mailbox or Change Mailbox Number command button is selected. To create a new mailbox or to change the number of an existing mailbox, use the following procedure:



12.8 **MAILBOX NUMBER:** Enter the desired mailbox number in the text box.

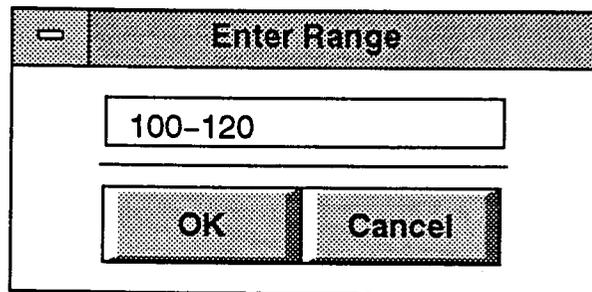
12.9 **OK:** When finished, select OK. Selecting OK after creating a mailbox automatically displays the window shown on page 3-41.

- *If you entered an invalid number or a number that is already assigned, you will see a warning window. Select OK to continue and then select a valid number.*

12.10 **CANCEL:** To exit without creating a mailbox, select the Cancel command button.

B. BATCH CREATION OF MAILBOXES

12.11 The following window appears when the Batch Create Mailboxes command button is selected. To determine the stations and hunt groups that will have mailboxes created for them, use the following procedures.



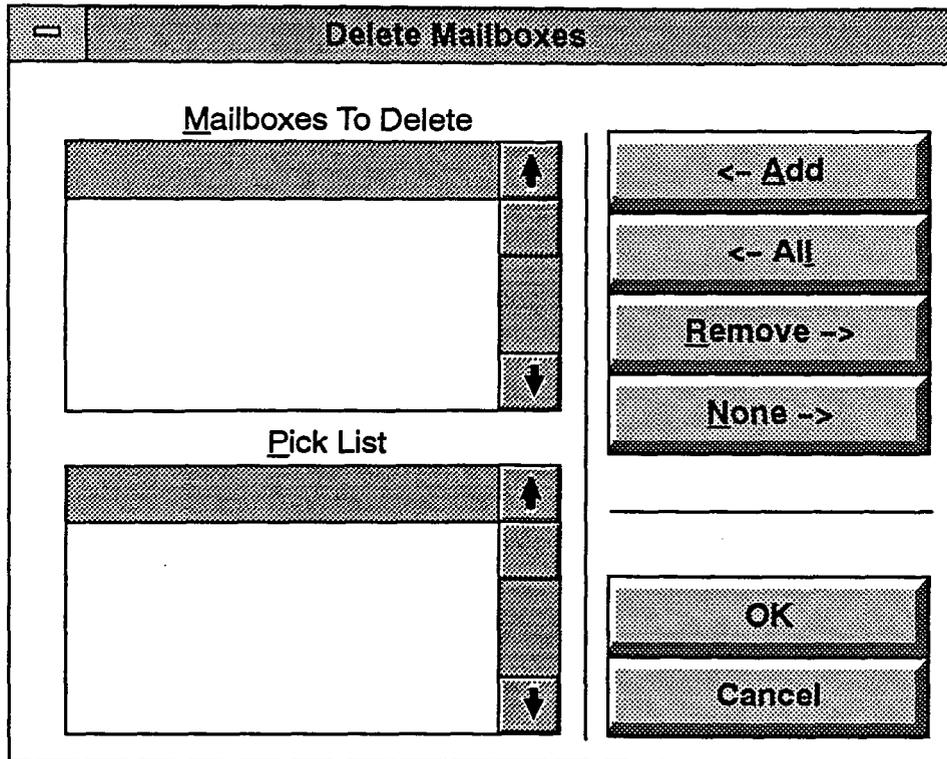
12.12 **ENTER RANGE:** To create mailboxes for one or more stations or hunt groups, enter a single extension number or a range of extension numbers. When entering a range, enter the lower extension number, a dash, and then the higher extension number as shown above. Extension numbers can have 1-5 digits, but cannot begin with 0.

12.13 **OK:** When you have entered the desired range, select the OK command button to return to the Extension ID Programming window. If the selected range is invalid or conflicts with other extensions, you will see one of the following messages:

- *If you enter an invalid extension number, you will see a warning message explaining the conflict. Select the OK command button in the warning window to continue.*
- *If the range you entered includes numbers that were previously assigned to extension IDs, mailboxes, or group lists, the conflicts are displayed. You can choose to abort the process and return to the Enter Range text box by selecting the Abort Batch Create command button in the warning window. Or, you can choose to override the conflicts and change the existing numbers into new mailboxes by selecting the Ignore Conflicts command button.*

12.14 **CANCEL:** To exit from this window without creating any new mailboxes, select the Cancel command button.

NOTE: When a large number of mailboxes have been created, it will take several minutes for the system to update the database and return to the Mailboxes programming window after you select the OK command button.



C. DELETING MAILBOXES

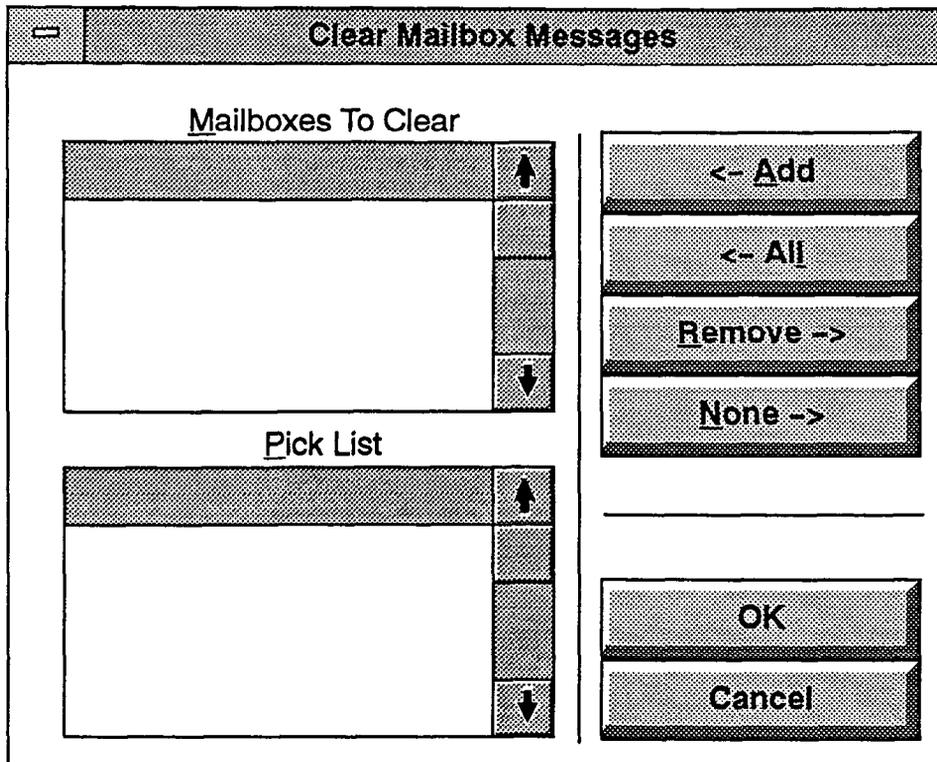
12.15 To delete one or more mailboxes, select the Delete Mailboxes command button shown on page 3-35. A window appears as shown above. To determine the mailboxes that will be deleted, use the following procedure:

- **ADD/ALL:** Use the Add command button to move the highlighted mailbox from the Pick List to the Mailboxes To Delete list, or use the All command button to place all mailboxes in the list.
- **REMOVE/NONE:** To remove a mailbox from the Mailboxes To Delete list, highlight it and select the

Remove command button. Or, to remove all mailboxes, use the None command button.

- **OK/CANCEL:** When the Mailboxes to Delete list box appears as desired, select the OK command button. Or, to exit without changing the lists, select the Cancel command button.

NOTE: When a large number of mailboxes have been deleted, it will take several minutes for the system to update the database and return to the Mailboxes programming window after you select the OK command button.



D. CLEARING MAILBOX MESSAGES

12.16 The window shown above appears when the Clear Mailbox Messages command button is selected. To determine the mailboxes that will have their messages erased, use the following procedure:

- **ADD/ALL:** Use the Add command button to move the highlighted mailbox from the Pick List to the Mailboxes To Clear list, or use the All command button to place all mailboxes in the list.
- **REMOVE/NONE:** To remove a mailbox from the Mailboxes To Clear list, highlight it and select the Remove command button. Or, to remove all mailboxes, use the None command button.
- **OK/CANCEL:** When the Mailboxes to Clear list box appears as desired, select the OK command button. Or, to exit without changing the lists, select the Cancel command button.

E. PROGRAMMING A MAILBOX

12.17 The window shown on page 3-41 appears when the Program command button is selected. To program the parameters for a mailbox, use the following procedures.

12.18 The programming window can be used for programming the following parameters for each mailbox.

- **Description:** Each mailbox can have a description of up to 20 characters. The description is used for providing first and last names for the mailbox directory. (For correct directory operation, enter the last name, followed by a comma and the first name.) Do not use Control characters in the descriptions.
 - **Message Notification Station:** Each mailbox should have a station that will receive message notification (lamp, message tones, etc.) whenever the mailbox receives a message. This is usually the same number as the mailbox. However, when a mailbox is shared by several stations, or belongs to a hunt group pilot number, a specific station must be designated to receive the message notification.
 - **Mailbox Initialized:** The mailbox programming window has an indicator that shows whether the subscriber (mailbox owner) has initialized the mailbox and recorded a name in the company directory.
 - **Associated Mailbox:** If the mailbox is associated with a station or hunt group it should be marked in the database as "associated". With associated mailboxes, the telephone system can validate mailbox numbers. (You must also enable a flag in the telephone system, see TELEPHONE INTERFACE for details.)
 - **Mailbox Type:** The mailbox can be programmed as a "standard" mailbox that can send and receive messages or it can be a "receive only" mailbox. (In the default state, it is a standard mailbox.)
 - **Remote Messaging:** If remote programming is enabled, a mailbox can have primary and/or alternate message notification that includes the following options.
 - **Enable Notification:** Message notification to an intercom number or to an outside telephone number can be turned on or off without changing any of the programmed parameters. (In the default state, notification is disabled.)
 - **Notification Number:** If the message notification number is an outside telephone number, it can have up to 16 digits. (It does not need to contain a trunk access code; it will use the outgoing access code programmed for the Remote Notification Tables window. See page 3-50.) Any valid intercom number can be used as the notification number.
- **Notification Start/Stop Time:** Message notification can be enabled for any time period, up to 24 hours per day. (Default is 8:00am to 5:00pm.) If start and stop times are the same, notification will be enabled 24 hours per day.
 - **Notification Type:** The message notification number can be identified as a personal number (a person will answer the call) or a pager. (This defaults to "personal number.")
 - **Notification Category:** Message notification can be set to place the notification call for each new message or only when priority messages are received. (This defaults to "each new message.")
 - **Remote Notification Tables:** The system can have up to 10 Remote Notification Tables (see page 3-50 for programming information). These tables determine what digits are sent when the system places a call to a pager.
 - **Days Of Week:** Message notification can be set to place notification calls only on certain days. (This defaults to Monday through Friday.)
 - **Password:** A password of up to 12 digits can be programmed for use by the subscriber when retrieving messages.
 - **Miscellaneous Information:** The miscellaneous parameters that can be programmed for each mailbox include the following. The Miscellaneous Information window also includes, for reference purposes, the length of the recorded name, primary greeting, and alternate greeting.
 - **Mailbox Message Capacity:** The mailbox can be programmed to hold 1-120 minutes of messages. Default capacity is 30 minutes.
 - **Maximum Non-Subscriber Message Length:** Maximum non-subscriber messages can be set to a value between one minute and the Maximum Mailbox Message Capacity setting. Default length is 5 minutes.
 - **Maximum Outgoing Message Length:** The length of outgoing messages by this subscriber can be 1-120 minutes. Default length is 5 minutes.
 - **Greeting Selection:** The system greeting, the mailbox primary greeting, or the mailbox alter-

nate greeting can be enabled. The greeting selection defaults to the system greeting.

- *Play Recording Instructions:* If this option is enabled, the system prompt that tells the caller to leave a message after the beep will play after the primary or alternate greeting. If disabled, the beep will occur as soon as the primary or alternate greeting ends. In the default state, this option is enabled.
- *Envelope Settings:* The “envelope” announcement that is played before each message can be programmed to announce date and time, message source, and/or message length. The default envelope contains all information.
- *Directory Information:* The mailbox can have an unlisted number (not included in the mailbox directory but can be dialed if the caller knows the mailbox number) and/or it can be a private ex-

tension and mailbox number (extension and mailbox number are not announced in directory, but the number can be dialed). There are no private or unlisted numbers in the default state.

- **Subscriber Statistics:** You can check the following information.
 - Date and time of last log on
 - Number of new and saved messages
 - Mailbox percent full
 - Number of times mailbox was 80% full or full
 - Number of messages sent and received
 - Total length of new and saved messages
 - Number of times three bad passwords were entered

12.19 DESCRIPTION: Enter a description of up to 20 characters in the Description text box. This description is used in the mailbox directory and should be entered in the form “last name, first name” (with a comma and space separating the names). Do not use Control characters.

12.20 MESSAGE NOTIFICATION STATION: To select the station that will receive message notifications, enter the desired extension number in the Message Notification Station text box.

12.21 ENABLE REMOTE MESSAGING: To enable remote messaging, select this check box to place a check mark in it. To disable remote messaging, select it again to remove the check mark.

12.22 PRIMARY/ALTERNATE MESSAGE NOTIFICATION: If remote messaging is enabled, select either the Primary or Alternate Message Notification command button to program the remote messaging parameters. A window appears as shown on page 3-42.

12.23 MAILBOX IS ASSOCIATED: If the mailbox is associated with a corresponding extension number on the telephone system and the telephone system is programmed to validate mailboxes, select this check box to place a check mark in it. To remove the check mark, select the check box again.

12.24 MAILBOX TYPE: To determine whether the mailbox type is Standard or Receive Only, select the

Mailbox Type drop-down list box and scroll the highlight bar to the desired type.

12.25 MISCELLANEOUS: To program additional mailbox information, select the Miscellaneous command button. A window appears as shown on page 3-44.

12.26 SUBSCRIBER STATISTICS: To view mailbox’s statistics, select the Subscriber Statistics command button. A window appears as shown on page 3-45.

12.27 PASSWORD: To program a password for the mailbox, select this command button. A window appears as shown below. Enter a password (up to 12 digits). Asterisks appear in place of the digits as the password is typed. Then select the OK command button. The window heading will change to “Password Validation” and you must retype the password exactly as before. If the entered passwords match, you will return to the Mailbox window, if not, you must re-enter the new password and verify it again. If you make a mistake while entering the password or wish to leave it unchanged, select the Cancel command button.

☐ Enable Notification

Notification Number

Notification Start Time: 08:00am

Notification Stop Time: 05:00pm

Notification Type: Personal Number

Notification Category: Each New Message

Remote Notification Table: 01. Table 01

Days Of The Week... OK Cancel

Remote Message Notification Programming

12.28 This window appears when the Primary Message Notification or Alternate Message Notification command button is selected.

12.29 ENABLE NOTIFICATION: To enable remote message notification, select the Enable notification check box to place a check mark in it. To disable remote message notification, select the check box again to remove the check mark.

12.30 NOTIFICATION NUMBER: In the Notification Number text box, enter the number (outside number or extension number) to be notified when the mailbox receives a message. Do not begin the number with 0 and do not include a trunk access code; it will use the outgoing access code programmed in the Remote Notification Table for the port (see page 3-50). If you enter invalid characters, you will see a warning message and you will have to enter a valid number.

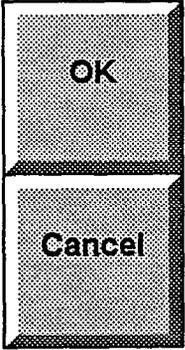
12.31 NOTIFICATION TYPE: Determine whether the notification is a Personal Number (that will be answered by a person) or Pager by selecting the Notification Type drop-down list box and scrolling the highlight bar to the desired option.

12.32 NOTIFICATION CATEGORY: Determine whether the notification number will be called whenever a new message is received or only when priority messages are received. Select the Notification Category drop-down list box and scroll the highlight bar to the desired option.

12.33 NOTIFICATION START and STOP TIME: Enter the time of day that notifications will begin in the Notification Start Time text box. Enter the time of day that notifications will end in the Notification Stop Time text box. Use 12-hour format followed by "am" or "pm," or use 24-hour format. For round-the-clock notification, set the start and stop times to the same value.

12.34 REMOTE NOTIFICATION TABLE: The system can have up to 10 Remote Notification Tables (see page 3-50 for programming information). Select the drop-down list box and scroll the highlight bar to the desired Remote Notification Table.

12.35 DAYS OF THE WEEK: To determine for which days of the week notifications will be enabled, select the Days of the Week command button. The window shown on the next page appears.

Notification Days Of Week	
<input type="checkbox"/> Sunday	
<input checked="" type="checkbox"/> Monday	
<input checked="" type="checkbox"/> Tuesday	
<input checked="" type="checkbox"/> Wednesday	
<input checked="" type="checkbox"/> Thursday	
<input checked="" type="checkbox"/> Friday	
<input type="checkbox"/> Saturday	

12.36 DAYS OF THE WEEK: Select the check box(es) for the desired day(s). The check marks show the selected days. To remove a check mark, select the check box again. When finished select OK. Or, select Cancel to leave the days of the week unchanged.

12.37 OK/CANCEL: When message notification programming is complete, select the OK command button. Or, to exit without saving any changes, select the Cancel command button.

Miscellaneous Mailbox Information — Mailbox Number: XXX	
Maximum Mailbox <u>M</u> essage Capacity <input type="text" value="30"/> min. [Default 30] [Range 1-120]	Greeting: <input type="text" value="System Greeting"/>
Maximum <u>N</u> on-subscriber Message Length <input type="text" value="5"/> min. [Default 5] [Range 1-Capacity]	<input checked="" type="checkbox"/> Play Recording Instructions
Maximum <u>O</u> utgoing Message Length <input type="text" value="5"/> min. [Default 5] [Range 1-120]	Envelope Settings <input checked="" type="checkbox"/> Announce <u>D</u> ate and Time <input checked="" type="checkbox"/> Announce Message <u>S</u> ource <input checked="" type="checkbox"/> Announce Message <u>L</u> ength
Recorded Name Length: 0 seconds Primary Greeting Length: 0 seconds Alternate Greeting Length: 0 seconds	Directory Information <input type="checkbox"/> <u>U</u> nlisted Number <input type="checkbox"/> Private Extension and Mailbox Number
<input type="button" value="OK"/> <input type="button" value="Cancel"/>	

Miscellaneous Mailbox Information Programming

12.38 This window appears when the Miscellaneous command button is selected.

12.39 MAXIMUM MAILBOX CAPACITY: This is the amount of mailbox message storage available, in minutes. The default is 30 minutes. The range is 1-120 minutes. Enter the desired number in the text box. *If you enter an invalid number, you will see a warning message. Select OK to continue.*

12.40 MAXIMUM NON-SUBSCRIBER MESSAGE LENGTH: This is the maximum length of time (in minutes) for non-subscriber mailbox messages. Default is 5 minutes. The range is 1 minute to the Maximum Mailbox Message Capacity value. Enter the new value in the text box. *If you enter an invalid number, you will see a warning message. Select OK to continue.*

12.41 MAXIMUM OUTGOING MESSAGE LENGTH: This is the maximum length for messages sent by the subscriber to another subscriber. The default is 5 minutes. The range is 1-120 minutes. Enter the new value in the text box. *If you enter an invalid number, you will see a warning message. Select OK to continue.*

12.42 GREETING: To determine the greeting callers will hear when they reach the mailbox, select the Greeting drop-down list box and scroll the highlight bar to the desired selection (Primary, Alternate, or System Greeting). **NOTE:** Even if re-programmed, the system greet-

ing will continue to play until the greeting selected here has been recorded.

12.43 PLAY RECORDING INSTRUCTIONS: To disable the instructions that play after the primary or alternate greeting, select the check box to remove the check mark. To enable the option, select the box again.

12.44 ENVELOPE SETTINGS: To determine which elements will be included in the "envelope" that is played before each message, select the desired elements to place a check mark in their check boxes. To disable any element, select the check box again to remove the check mark.

12.45 DIRECTORY INFORMATION: If the mailbox will have an unlisted or private extension, select the desired check box to place a check mark in it. Or, to disable the option and remove the check mark, select the box again.

12.46 RECORDED NAME LENGTH, PRIMARY GREETING LENGTH, and ALTERNATE GREETING LENGTH: This section of the window displays the number of seconds used by the mailbox's directory name recording and the length of the primary and alternate greetings. The information is shown for reference only. It is not programmable.

12.47 OK/CANCEL: When mailbox information programming is complete, select the OK command button. Or, to exit without saving any changes, select the Cancel command button.

Subscriber Statistics — Mailbox Number: XXX	
Date and Time of Last Logon:	None
Number of New Messages:	0
Number of Saved Messages:	0
Mailbox Percent Full:	0%
Number of Times Mailbox Was 80% Full:	0
Number of Times Mailbox Was Full:	0
Number of Messages Sent:	0
Number of Messages Received:	0
Total Length of New and Saved Messages:	0 hours, 0 minutes
Number of Times 3 Bad Passwords Were Entered:	0
OK	

Subscriber Statistics Report

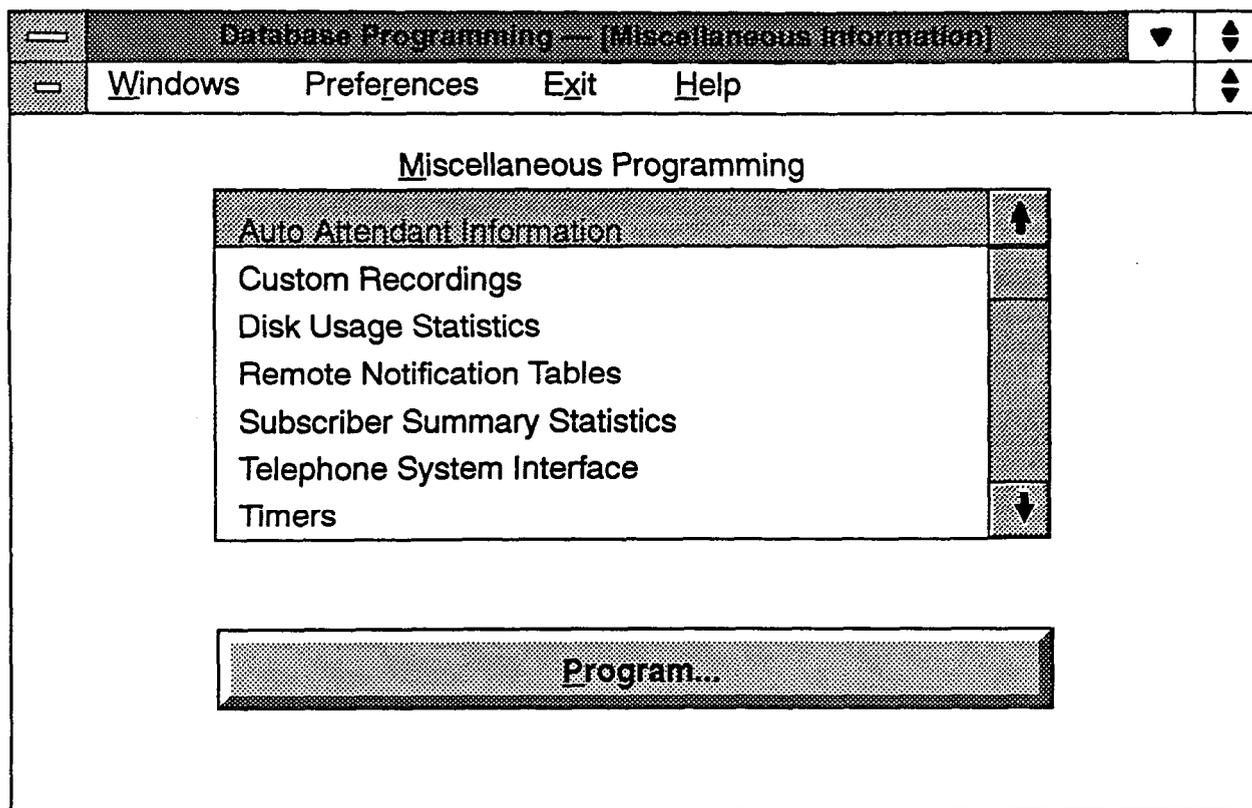
12.48 This window appears when the Subscriber Statistics command button is selected. It shows the following information for the selected mailbox.

12.49 The statistics for this report reflect the period since the last date that the statistics were cleared. Statistics are cumulative and remain as such until cleared using the Report Programming window.

- **Date and Time of Last Logon:** At default, this displays "None." Once the subscriber logs on to the mailbox this field will reflect the most recent date and time of the last valid logon. (If the System Administrator makes any change to a subscriber's personal options from the System Administrator's mailbox, no change will be made to this field.)
- **Number of New Messages:** This is a count of the number of messages in a subscriber's new message queue. It is the same number that is reported to the subscriber when he or she logs in to the mailbox.
- **Number of Saved Messages:** This is a count of the number of messages stored in the saved message queue for the mailbox. It is the same number that is reported to the subscriber when he or she logs in to the mailbox.
- **Mailbox Percent Full:** This shows the actual percentage of maximum mailbox message capacity used.

- **Number of Times Mailbox Was More Than 80% Full:** This shows the number of times the mailbox reached 80% of its maximum message capacity.
- **Number of Times Mailbox Was Full:** This displays the number of times a mailbox reached its maximum message capacity.
- **Number of Messages Sent:** This is a count of the number of times a subscriber records and sends a message (to one mailbox or a group list of mailboxes), replies to a message sent by another subscriber, or forwards a message with comments.
- **Number of Messages Received:** This shows the number of messages a subscriber has received regardless of where the messages came from (subscriber, non-subscriber, or system).
- **Total Length of New and Saved Messages:** This is a combined total of the amount of time represented by the "Number of New Messages" and "Number of Saved Messages" fields.
- **Number of Times 3 Bad Passwords Were Entered:** This counter increases each time a single call includes three attempts to enter a mailbox and the caller uses an incorrect mailbox/password combination.

12.50 OK: When you are finished viewing the report, select the OK command button to exit.



13. MISCELLANEOUS INFORMATION

13.1 The following information can be programmed and reports viewed using this window. A program planning sheet is located in Figure 3-8, on page 3-73.

- **Automated Attendant Information:** Enable/disable the directory and/or determine whether the directory is sorted by first or last name. The window is shown on the next page.
- **Custom Recordings:** Program descriptions for Custom Recordings (01-50). The window is shown on page 3-48.
- **Disk Usage Statistics:** Display a report that shows the status of the disk storage. The window is shown on page 3-49.
- **Remote Notification Tables:** Determine the numbers that will be dialed by the system for pager answer, LCD display, pager termination, and outgoing trunk access. The window is shown on page 3-50.
- **Subscriber Summary Statistics:** Display a report that shows mailbox statistics for all mailboxes combined. The window is shown on page 3-52.
- **Telephone System Interface:** This option allows you to program the telephone system information that will be used by the IVX500 System. The window is shown on page 3-53.
- **Timers:** Program the system and voice processing timers that are used by the applications. The window is shown on page 3-54.
- **Voice Mail Information:** Select the System Administrator's mailbox, enable/disable the voice mail directory, determine the directory sort order, and set the volume for voice mail prompts. The window is shown on page 3-57.

13.2 MISCELLANEOUS PROGRAMMING/
PROGRAM: To reach one of the options, highlight it in the list box and select the Program command button. The windows are shown on the pages listed above.

The screenshot shows a dialog box titled "Miscellaneous: Auto Attendant Information". Inside the dialog, there is a checked checkbox labeled "Enable Auto-Attendant Directory". Below this, there is a label "Directory Sort Order:" followed by a dropdown menu box containing the text "Last Name" and a downward-pointing arrow. To the right of these elements are two buttons: "OK" and "Cancel".

A. AUTO ATTENDANT INFORMATION

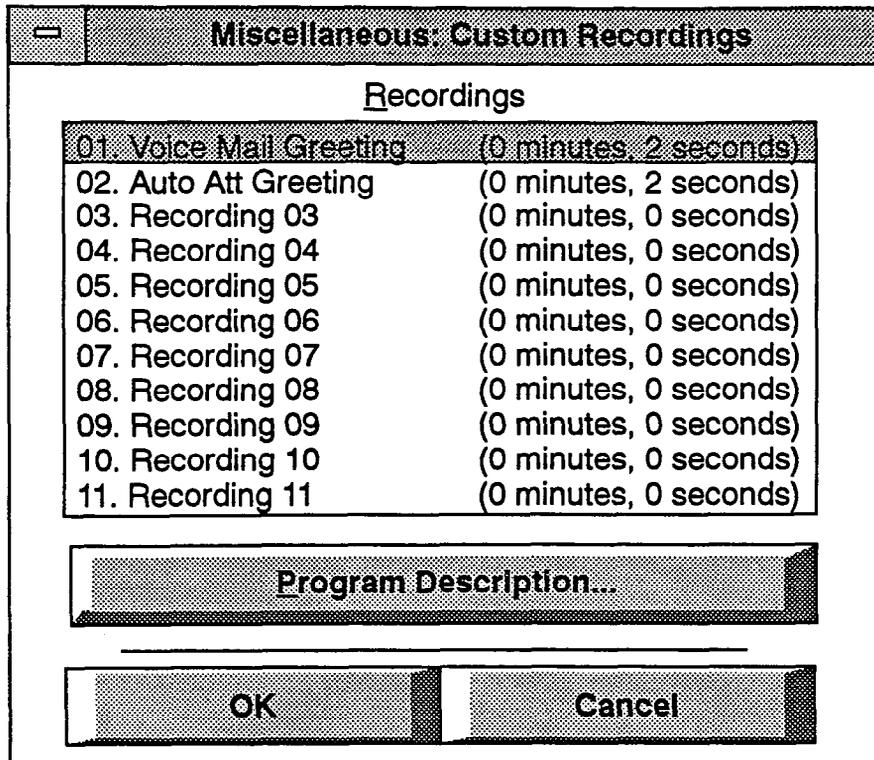
13.3 This window appears when Auto Attendant Information is highlighted and the Program command button is selected. It is used for determining whether the automated attendant application will use the mailbox and extension ID directory and how the directory is sorted. Default values are shown in the window above.

13.4 ENABLE AUTO-ATTENDANT DIRECTORY: To enable the directory, select this check box to

place a check mark in it. To disable the directory, select it again to remove the check mark.

13.5 DIRECTORY SORT ORDER: To determine whether the mailbox and extension ID descriptions in the directory will be sorted by first name or last name, select the drop-down list box and scroll the highlight bar to the desired option.

13.6 OK/CANCEL: When finished, select the OK command button. Or, to exit without saving any changes, select the Cancel command button.



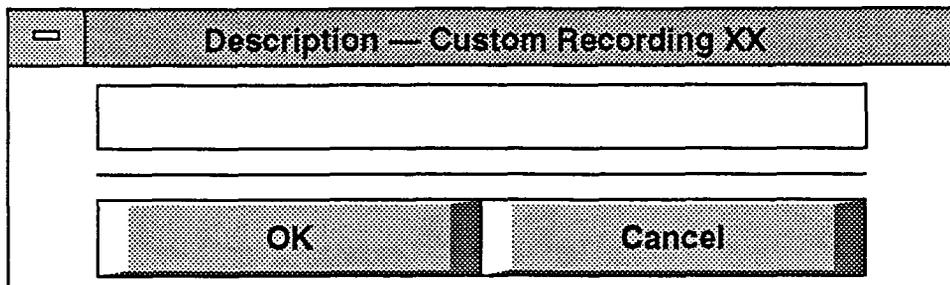
B. CUSTOM RECORDINGS

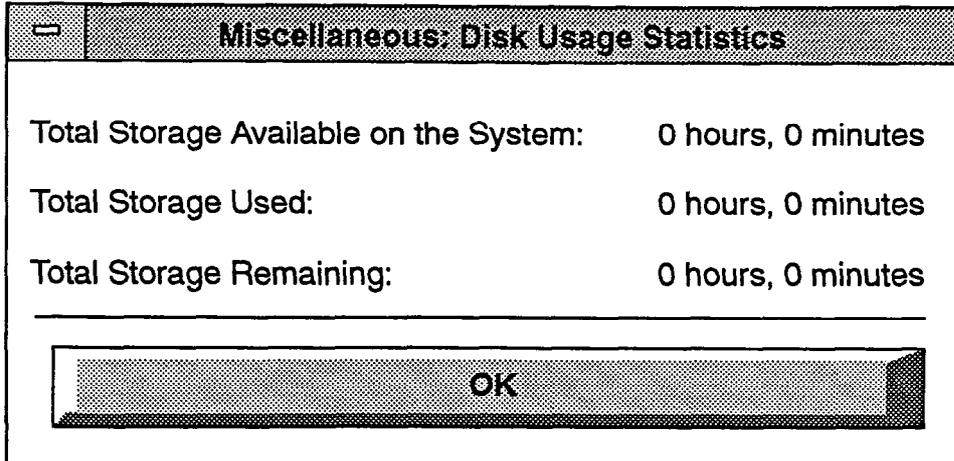
13.7 This window appears when Custom Recordings is highlighted and the Program command button is selected, as shown on page 3-46.

13.8 RECORDINGS/DESCRIPTION: The list box shows the custom recordings (01-50) and their current descriptions and lengths. To change the description of a recording, highlight it in the list box and select the Pro-

gram Description command button. The following window appears. Enter the desired description, up to 20 characters, and select the OK command button. Or select the Cancel command button to leave the description unchanged.

13.9 OK/CANCEL: When finished, select the OK command button. Or, to exit without saving any changes, select the Cancel command button.





C. DISK USAGE STATISTICS

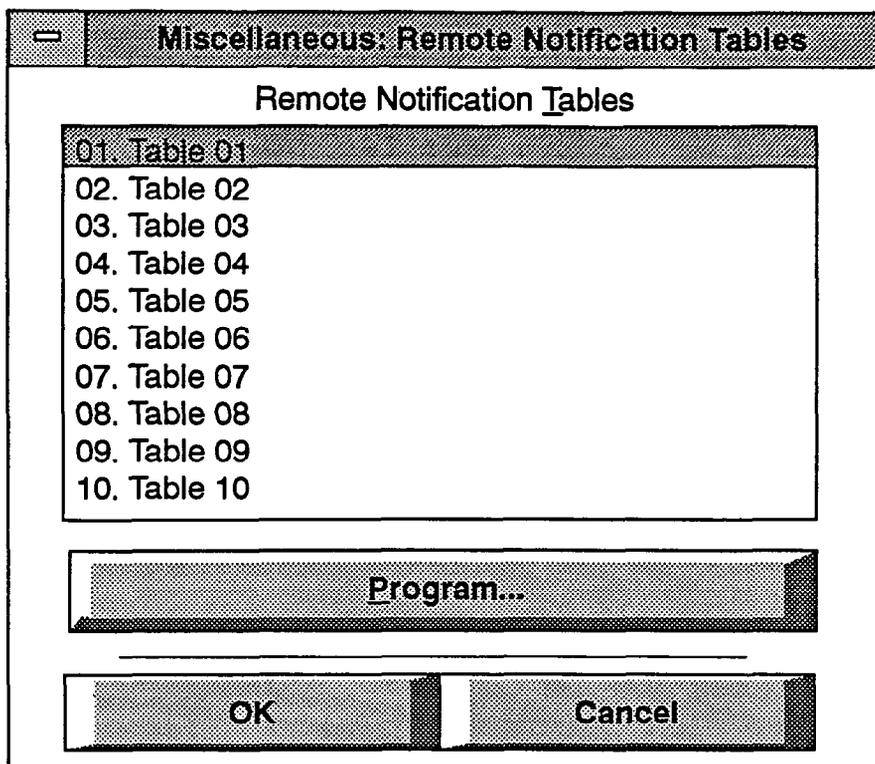
13.10 This window appears when Disk Usage Statistics is highlighted and the Program command button is selected, as shown on page 3-46. The report includes the following information:

- **Total Storage Available on the System:** This is the amount of disk space available on the system.
- **Total Storage Used:** This is the disk space that has been used by the applications.

- **Total Storage Remaining:** This is the amount of disk space remaining in the IVX500 System. If the disk is nearly full, you can increase disk space by clearing mailbox messages. If available disk space is frequently low, a larger-capacity disk drive should be installed in the PC.

13.11 OK: When finished, select the OK command button to exit.

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D. REMOTE NOTIFICATION TABLES

13.12 This window appears when Remote Notification Tables is highlighted and the Program command button is selected, as shown on page 3-46. It allows you to set up pager dialing information and outgoing trunk access criteria in tables that are then assigned to the individual mailboxes in the programming window shown on page 3-42.

13.13 REMOTE NOTIFICATION TABLES/ PROGRAM: To program a dial string table, highlight it in the list box and select the Program command button. A window appears as shown on the next page.

13.14 OK/CANCEL: When you have finished programming Remote Notification Tables, select the OK command button to exit and save the changes. To exit without saving changes, select the Cancel command button.

Remote Notification Table XX

Description

Table XX

Pager Notification Strings

Pager Answer:

Pager LCD Number Display:

Pager Termination:

Outgoing Access Strings

Outgoing Access:

Outgoing Access Termination:

OK

Cancel

13.15 This window appears when a Remote Notification table has been selected for programming, as described on the preceding page.

13.16 DESCRIPTION: Enter a description of up to 20 characters in the Description text box.

13.17 PAGER NOTIFICATION STRINGS: Valid entries for all of the Pager Notification Strings include any digit 0-9, P for pause, #, and *. You can enter up to 18 characters. Also, if you wish to have the pager show the number of the mailbox that placed the call, you can use an M in the dial string. For example, if the Pager LCD Number Display is programmed as 9619000*M and a pager call is placed by mailbox number 1234, the pager display would show 9619000*1234. *If you enter an invalid number, you will see a warning message. Press OK to continue and make a valid entry.*

- **PAGER ANSWER:** In this text box, enter up to 18 digits that the paging company requires prior to receiving the pager LCD number and the pager termination code.
- **PAGER LCD NUMBER DISPLAY:** Enter the telephone number that voice mail will send to the pagers as the callback number for all remote message noti-

fications sent to pagers. The maximum length for this field is 18 digits.

- **PAGER TERMINATION:** Enter the digit(s) (up to 18) that must be dialed to terminate the dialing sequence for a pager. At default, it is #.

13.18 OUTGOING ACCESS STRINGS: The maximum length these dials string is 18 digits.

- **OUTGOING ACCESS:** This text box is used to identify the dial string used for selecting a trunk for placing remote notification calls. The maximum length is 18 digits (0-9, *, #, P for pause, or F for hookflash). (Make sure that the port has been programmed with outgoing access for the selected trunk group in the telephone system database.)
- **OUTGOING ACCESS TERMINATION:** This text box contains the dial string that the system uses to terminate an outgoing number. The maximum length is 18 digits (0-9, *, #, or F for hookflash). At default, the setting is #.

13.19 OK/CANCEL: When finished, select the OK command button. Or, to exit without saving any changes, select the Cancel command button.

Miscellaneous: Subscriber Summary Statistics	
Number of Mailboxes:	0
Number of New Messages:	0
Number of Saved Messages:	0
<hr/>	
Average Mailbox Percent Full:	0
Number of Times Mailboxes Were More Than 80% Full:	0
Number of Times Mailboxes Were Full:	0
Number of Mailboxes Currently More Than 80% Full:	0
Number of Mailboxes Currently Full:	0
<hr/>	
Number of Messages Sent:	0
Number of Messages Received:	0
<hr/>	
Total Length of New and Saved Messages:	0 hours, 0 minutes
Number of Times 3 Bad Passwords Were Entered:	0
<div style="border: 1px solid black; padding: 5px; display: inline-block;">OK</div>	

E. SUBSCRIBER SUMMARY STATISTICS

13.20 This window appears when Subscriber Summary Statistics is highlighted and the Program command button is selected, as shown on page 3-46. It displays the following information. (Statistics continue to accumulate until cleared using the Report Programming window.)

- **Number of Mailboxes:** This shows the number of mailboxes that have been created in voice mail.
- **Number of New Messages:** This is the total of the number of messages in all subscriber's new message queues.
- **Number of Saved Messages:** This is the total of the number of messages stored in the saved message queues for all mailboxes.
- **Average Mailbox Percent Full:** This shows the average percentage of maximum message capacity used by all mailboxes.
- **Number of Times Mailboxes Were More Than 80% Full:** This shows the number of times any mailbox reached 80% of its maximum message capacity.
- **Number of Times Mailboxes Were Full:** This displays the number of times any mailbox reached its maximum message capacity.
- **Number of Mailboxes Currently More Than 80% Full:** This shows how many mailboxes are currently over 80% of their maximum message capacity.
- **Number of Mailboxes Currently Full:** This shows the number of mailboxes that are currently at their maximum capacity.
- **Number of Messages Sent:** This is a count of the number of times subscribers have recorded and sent messages (to one mailbox or a group list of mailboxes), replied to a message sent by another subscriber, or forwarded a message with comments.
- **Number of Messages Received:** This shows the number of messages that subscribers have received regardless of where the messages came from (subscriber, non-subscriber, or system).
- **Total Length of New and Saved Messages:** This is a combined total of the amount of time represented by the "Number of New Messages" and "Number of Saved Messages" fields.
- **Number of Times 3 Bad Passwords Were Entered:** This counter increases each time a single call includes three attempts to enter a mailbox and the caller uses an incorrect mailbox/password combination.

13.21 **OK:** When finished, select the OK command button to exit.

F. TELEPHONE SYSTEM INTERFACE

13.22 This window appears when Telephone System Interface is highlighted and the Program command button is selected, as shown on page 3-46. It allows you to program the telephone system information that will be used by the IVX500 System. Refer to the APPLICATION AND TELEPHONE SYSTEM SETUP section for further information regarding the specific telephone systems.

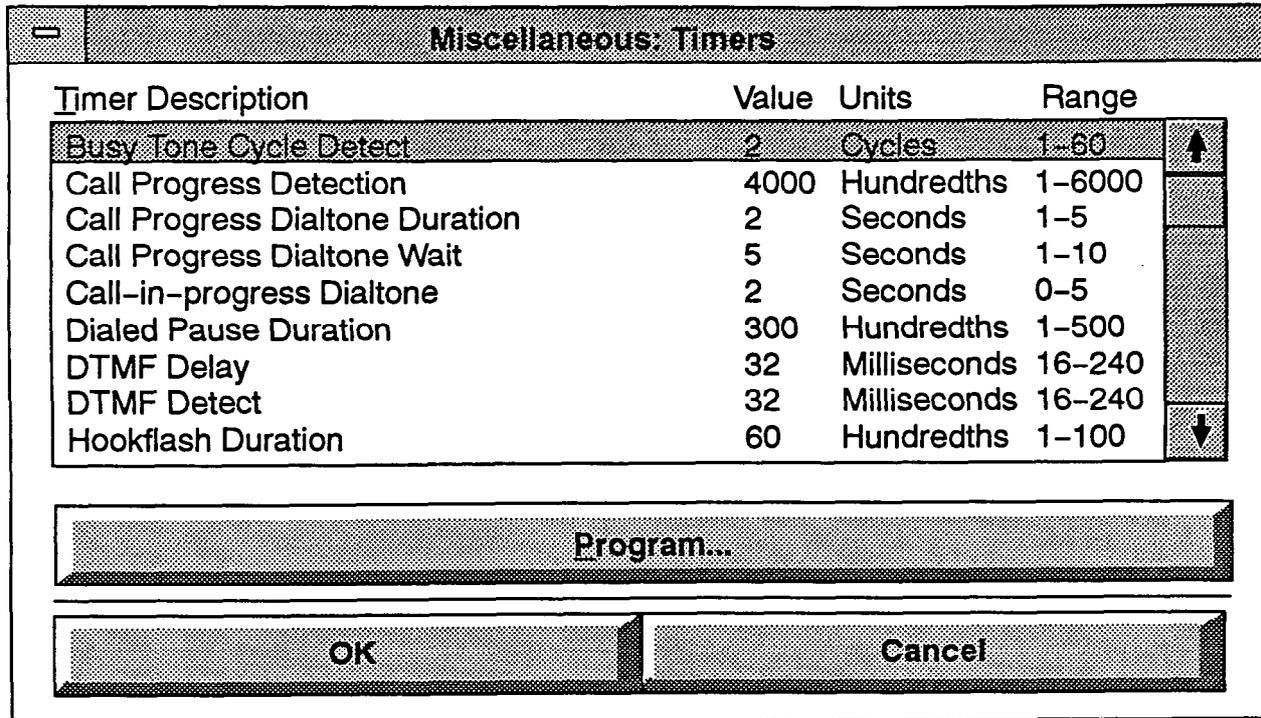
13.23 SYSTEM TYPE: Use the System Type drop-down list box to select the type of telephone system by scrolling the highlight bar to the appropriate system name for your installation.

13.24 VOICE TALK: If the telephone system supports the Voice Talk feature, select this check box to place a check mark in it. To remove the check mark, select it again. Refer to page 4-3 in APPLICATION AND TELEPHONE SYSTEM SETUP for a discussion of Voice Computer Hunt Groups and Voice Talk.

13.25 BLIND TRANSFERS: If this flag is enabled, the IVX500 will hang up immediately after dialing an extension number. If disabled, it will hold the line and listen for call progress tones or collect a Voice Talk response. To enable the flag, select this check box to place a check mark in it. To remove the check mark, select it again.

13.26 FEATURE CODES: If any the feature codes shown in these text boxes do not match the feature codes that are programmed for the telephone system, enter the correct code in the appropriate text box. You can enter up to five digits including 0-9, *, #, F (hookflash), or P (pause). If your entry is invalid, you will see a warning message and must enter a new code. (NOTE: On the AXXESS System, the Call Initiation code must be #P to function correctly with the IVX500 System.)

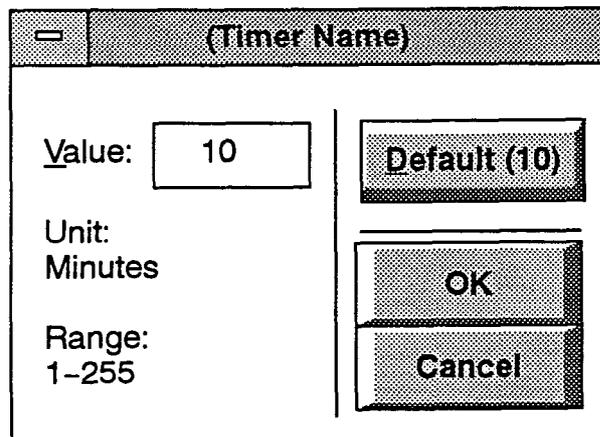
13.27 OK/CANCEL: When telephone system interface programming is complete, select the OK command button. To exit without changing any information, select the Cancel command button.



G. TIMERS

13.28 This window appears when Timers is highlighted and the Program command button is selected, as shown on page 3-46.

13.29 TIMER/PROGRAM: To program a timer, highlight it in the list box and select the Program command button. The following window appears:



- **VALUE:** Enter the desired value for the timer, within the valid range, as shown.
- **DEFAULT:** To return the timer to default value, select the Default command button. The button shows the default value.

- **OK/CANCEL:** When the timer is programmed correctly, select the OK command button. Or to exit without changing the timer, select the Cancel command button.

13.30 OK/CANCEL: When finished programming all timers, select the OK command button. Or, to exit without saving any changes, select the Cancel command button.

13.31 The following timers can be programmed for the system:

- **Busy Tone Cycle Detect:** This is the minimum number of cycles of tone the system needs to recognize busy, do-not-disturb, or reorder tones sent from the telephone system. When the system does not recognize one of these tones, it will assume the call is answered. (For proper tone detection, refer to page 3-53 to ensure that the system is programmed to interface with the proper telephone system.) The range for this timer is 1-60 cycles. The default is 2 cycles.
- **Call Progress Detection:** This determines the maximum length of time the system will wait for a call to be answered before aborting the attempted call. If it detects anything other than silence during this time, the system will consider the call answered. The range for this timer is 1-6000 hundredths of a second (1/100 to 60 seconds). The default is 4000 hundredths (40 seconds).

- **Call Progress Dialtone Duration:** This indicates the minimum duration of continuous dial tone that the system can recognize when placing or transferring a call and when disconnecting from a call. The range for this timer is 1–5 seconds. The default is 2 seconds.
- **Call Progress Dialtone Wait:** This is how long the system will wait for dial tone when placing a remote notification call or transferring a call through the automated attendant, before disconnecting. It must be set at least one second higher than the Call Progress Dialtone Duration Timer. If you attempt to set it too low, you will see a warning message and must enter a new value. The minimum setting for this timer is the value of the Call Progress Dialtone Duration timer plus 1; the maximum setting is 10 seconds. The default is 5 seconds.
- **Call-In-Progress Dialtone:** This is the minimum duration of continuous dial tone that the system can recognize during an active call (for example, when a caller hangs up while connected to the voice mail application). To disable dial tone detection on active calls, set this timer to 0. The range for this timer is 0–5 seconds. The default is 2 seconds.
- **Dialed Pause Duration:** This determines the length of pauses dialed by the system as part of feature codes, telephone numbers, and outgoing dialing strings. The range for this timer is 1–500 hundredths of a second ($1/100$ to 5 seconds). The default is 300 hundredths (3 seconds).
- **DTMF Delay:** This determines the minimum duration of DTMF tones that can be recognized by the system when a recording is being played (for example, when a prompt or message is playing). The range for this timer is 16–240 milliseconds. The default is 32 milliseconds.
- **DTMF Detection:** This determines the minimum duration of DTMF tones that can be recognized by the system during playback functions (for example, when the system is silent and waiting for input). The range for this timer is 16–240 milliseconds. The default is 32 milliseconds.

NOTE: If either of the DTMF timers is changed, the new value will not take effect until the system is completely idle. Also note that changing the DTMF Delay or DTMF Detection timer value is a trade-off between improving DTMF detection and increasing the possibility that human voices will be detected as DTMF tones (this is called “talk off”). As the value of the timer is reduced, DTMF detection is improved, but the possibility of talk off increases. As

the value is increased, the possibility of talk off is reduced, but the possibility of DTMF detection problems is increased.

- **Hookflash Duration:** This determines the length of hookflashes that are dialed by the system. The range for this timer is 1–100 hundredths of a second ($1/100$ to 1 second). The default is 60 hundredths (600 milliseconds).
- **Lamp Update Delay:** When a caller leaves a message that is directed to more more than one mailbox, this timer determines how long the system will wait between the consecutive message lamp updates. That is, after lighting the message lamp at the first mailbox’s station, the system will allow this timer to expire before it will place the call to the next mailbox’s station to light its message lamp. The range for this timer is 1–30 seconds. The default is 10 seconds.
- **Loop Current Loss:** This determines the minimum amount of time the system must detect loss of loop current before it will disconnect a call. The range for this timer is 1–1000 hundredths of a second ($1/100$ to 10 seconds). The default is $100/100$ (1 second).
- **Maximum Greeting Length:** This is the maximum time allowed for all mailbox greetings and custom recordings. The range for this timer is 1–15 minutes. The default is 1 minute.
- **Minimum Call Progress Signal Duration:** This timer determines the minimum duration of a period of sound necessary for the system to detect sound. That is, if a period of silence is broken by a burst of sound on the line and that sound is shorter than this timer, the system will ignore the sound. This timer applies to outgoing remote notification calls only. The range for this timer is 1–100 hundredth seconds. The default is 8 hundredths.
- **Minimum Call Progress Silence Duration:** This timer determines the minimum duration of a period of silence necessary for the system to detect silence. That is, if a period of sound is broken by silence and the silence is shorter than this timer, the system will ignore the silence. This timer applies to outgoing remote notification calls only. The range for this timer is 1–100 hundredth seconds. The default is 15 hundredths.
- **Minimum Ring Signal Off/On:** These timers determine the minimum on and off times that are necessary for the system to recognize a single incoming ring cycle. The range for these timers is 1–100 tenths of a second (0.1 to 10 seconds). The default for the Off timer is 5 tenths (0.5 seconds). The default for the On timer is 3 tenths (0.3 seconds). This timer

works in conjunction with the Number of Rings Before Answer field in Port Programming, shown on page 3-26.

- **Minimum Time Between Incoming Calls:** If a port is programmed to wait for more than one ring before answering (see page 3-26), this timer tells the system when to reset the internal ring counter and prepare for the next call, if a call was received that did not meet the minimum number of rings. That is, if the port is programmed to wait for four rings and only detects two rings during an incoming call attempt, it will not answer and the ring counter remains at 2. This timer will tell the port how long to wait before resetting the timer back to 0 to prepare for the next incoming call. The range for this timer is 1-100 tenths of a second (0.1 to 10 seconds). The default is 80 tenths (8 seconds).
- **Notification No-Answer Detection:** This establishes the number of rings required before the system considers an attempt at remote messaging a "no-answer" condition. The range for this timer is 1-25 rings. The default is 4 rings.
- **Number Called Busy:** This timer defines the amount of time the system will wait between outgoing call attempts whenever a busy signal is encountered during a remote message notification attempt to a personal number. The range for this timer is 1-255 minutes. The default is 5 minutes.
- **Off-Hook Delay:** This determines how long the system should wait after coming off hook before playing the first prompt. The range for this timer is 0-5 seconds. The default is 0. However, the recommended minimum setting is 1 second to allow a pause before the prompts are played, thereby assuring that no text is cut off.
- **Outgoing DTMF Digit Duration:** This is the length of the DTMF tones (and inter-digit pauses) that are sent during remote notification to a pager or personal number. The range for this timer is 30-250 milliseconds. The default is 60 milliseconds. **NOTE:** If this timer is changed, the PC must be reset to update the PC with the new timer value.
- **Pager Notification Retry:** This is the amount of time the system will wait between outgoing call attempts when the notification number is a pager. The range for this timer is 1-255 minutes. The default is 20 minutes.
- **Pause Voice Mail:** This timer defines the maximum amount of time that the system will pause during the playback of a message or recording. The range for this timer is 1-240 seconds. The default is 30 seconds.
- **Personal Number No Answer:** This timer defines the amount of time the system will wait between outgoing call attempts whenever a message notification attempt to a personal number is unanswered. The range for this timer is 1-255 minutes. The default is 30 minutes.
- **Reconnect Delay:** This timer determines how long the system will wait after dialing the Reconnect feature code before prompts are played. The range for this timer is 0-5 seconds. The default is 2 seconds.
- **Replay Forward/Rewind Increment:** This timer determines the number of seconds a message or recording will be advanced or backed up when a user skips ahead or backward during a replay. The range for this timer is 1-60 seconds. The default is 5 seconds.
- **Shortest Message Allowed:** This is the length of the shortest message that will be accepted by the system. (Messages terminated with # are always allowed, regardless of length.) The range for this timer is 1-5 seconds. The default is 3 seconds.
- **Voice Computer Hunt Group Dial String:** When a port is programmed to receive voice computer hunt group data from the telephone system, this timer determines the amount of time the system will wait for each digit of a voice computer hunt group dial string sent by the telephone system. The range for this timer is 1-5 seconds. The default is 1 second.
- **Voice Talk Feedback:** When the system is connected to a telephone system that support Voice Talk, this determines the length of time the system will wait for each digit of the Voice Talk response from the telephone system. The range for this timer is 1-30 seconds. The default is 5 seconds.

H. VOICE MAIL INFORMATION

13.32 This window appears when Voice Mail Information is highlighted and the Program command button is selected, as shown on page 3-46. The voice mail parameters that are programmed in this window must be set up before the voice mail system is able to operate efficiently. These parameters include: defining a System Administrator's mailbox, enabling or disabling the voice mail directory, determining directory sorting order, and adjusting the audio volume. Default values are shown in the window above.

13.33 SYSTEM ADMINISTRATOR MAILBOX: A System Administrator's mailbox is defined in order to record custom recordings for system applications created in Applications Programming, send broadcast messages to all subscribers, and perform Mailbox and Group List maintenance, and receive messages regarding disk storage space. Select the System Administrator Mailbox drop-down list box and scroll to the desired mailbox.

13.34 ENABLE VOICE MAIL DIRECTORY: Select the Enable Voice Mail Directory check box to place a check mark in it and enable the voice mail directory. To disable the directory, select the check box again to remove the check mark.

NOTE: If the voice mail mailbox directory is disabled, callers using the voice mail system will not receive a

system prompt giving the option to search the directory for the person they wish to speak to. If the dial pad key normally associated with access to the mailbox directory is selected, the caller will be informed that the selection is invalid.

13.35 DIRECTORY SORT ORDER: Select the Directory Sort Order drop-down list box and scroll to the desired option (last name or first name) to determine the directory sorting order. This parameter also defines which system voice prompt will play when directing callers to spell a first or last name.

13.36 VOLUME: Select the Volume Level drop-down list to select the volume level for all of the IVX500 System ports. Scroll the highlight bar to the desired volume level. (The text adjacent to the drop down list box specifies that -8 is the softest setting, 0 is standard, and +8 is the loudest.)

NOTE: When a caller, using voice mail, increases or decreases the volume during the call, the system volume level currently programmed does not change. Only the volume of that call is temporarily altered. When the user has completed the call, the system resets the volume the setting currently established in the Volume Level drop-down list box.

13.37 OK/CANCEL: When finished, select the OK command button. Or, to exit without saving any changes, select the Cancel command button.

14. REPORTS

14.1 The voice mail system includes reporting capabilities to print reports to a printer or to a file for storage. The reports include Applications and Port Statistics, Directory Listings (by last name or first name or extension), and Group List reporting. A sample report is shown on page 3-61. The reports include the following information:

- **Applications and Port Statistics:** The following information appears individually for each application and as a summary for all applications.

- *Description and extension number of the application:* The “description” field shows the programmed name for the application. (Call Routing Announcement applications are all listed together by extension.) The applications are listed in the following order: Quick Message Retrieval, Non-Subscriber Voice Mail, Auto Attendant, and Call Routing Announcement. (Auto Attendant Recall applications are reported within the Auto Attendant information.)

- *Incoming calls:* This shows the total number of calls received by that extension number. This is shown as a combined total for Call Routing Announcement applications.

- *Outgoing calls:* These are the remote message notification calls placed by the IVX500 System ports.

- *Connect minutes:* This shows the total time spent on incoming and outgoing calls (if any) combined. This is shown as a combined total for Call Routing Announcement applications.

- *Minutes per call:* This is the average amount of time spent on each call in minutes and seconds.

This is shown as a combined total for Call Routing Announcement applications.

- *Transfers to Operator:* This shows the number of times a caller (within Voice Mail or Auto Attendant) presses the dial pad key 0 for operator access.

- *Voice Mail messages left:* This appears in the summary section only. It shows how many voice mail messages were left in all mailboxes combined.

- *Port statistics:* This portion includes data on the activity of all applications combined. It shows, in 30-minute segments, the total number of minutes and seconds that all of the ports were busy simultaneously. The detailed segments begin at 07:00 AM and conclude at 06:00 PM. The “Off Peak Hours” segment shows statistics for the remaining time period (6:00 PM to 7:00 AM). This section ends with a grand total of busy port occurrences for each of the days being reported.

- **Directory Listing Reports:** Directory Listings can be sorted by first name, last name, or extension/mailbox number. The listings show the description for the mailbox or extension ID, the mailbox/extension number, the message notification station (for mailboxes), and mailbox information. The mailbox information tells whether the mailbox is marked Private and/or Unlisted. (An X appears in the Mailbox field to indicate a mailbox that is neither Private nor Unlisted and a blank indicates that it is an extension ID.)

- **Group List Report:** The purpose of the Group List report is to provide the System Administrator with a printed copy of the system’s group lists. The report identifies the group list number, the description for the list, and the mailboxes included in the group list.

14.2 The programmer may establish automatic weekly reports that are sent to a printer on a selected day at a specified time. If desired, the programmer can also clear the system's statistics. If desired, manual reports may also be generated at any time without altering the weekly setup.

- The Manual Report Generation section of this window contains controls which allow you to select and print reports, and determine the directory sort order for manually generated reports.
- The Automatic Report Generation section of the window contains controls for establishing the day and time the system should automatically print reports, enabling automatic report printouts, clearing the system's statistics, and a list of the reports to print along with the option to sort the Directory Listing report.

14.3 To perform the programming for these reports select Report Programming from the programming options menu. A program planning sheet is located in Figure 3-9, on page 3-76.

14.4 **OUTPUT DEVICE:** Select this drop-down list box to specify the report's output device (FILE or LPT1).

14.5 **FILE:** (Used only if the output device is "FILE.") Enter the name of the desired file in the File text box. The system will validate that the specified drive output is defined but will not validate that the path exists on the system when this option is used. Instead, the database manager merely verifies that the file's syntax is correct (i.e., check for valid characters). However, it will not permit reports to be saved to the C: drive.

14.6 **PRINT REPORTS:** (The "Print Reports" command button, is only available if one of the report check boxes is marked or during a stand-alone programming session.) When this command button is selected, a window appears that says, "You are about to print the selected reports. Do you wish to continue?" Select Yes to print the report or No to cancel the report. In a direct-connection programming session, as the printing starts, the terminal cursor changes to an hourglass and you must wait until the report is complete before proceeding. If the system is unable to print the report, an error

message will display that states, "The system is unable to print the selected reports." If printing to a file, it suggests using another disk. If using a printer, it suggests that the printer may be off line or out of paper.

14.7 CLEAR STATISTICS: *(Not available in Stand-Alone programming)* The Clear Statistics command button allows you to clear all accumulated statistics from the system. When you select the Clear Statistics command button, a window appears that reads, "You are about to clear all of the accumulated statistics. Do you wish to continue?" Select Yes to continue or select Cancel to leave the messages unchanged.

14.8 PRINT DAY: To select the day for printing automatic reports, select the Print Day drop-down list box and scroll the highlight bar to the desired day.

14.9 PRINT TIME: To select the time of day for printing automatic reports, select the Print Time drop-down list box and scroll the highlight bar to the desired time.

14.10 ENABLE AUTOMATIC REPORTS: To enable the automatic report option, select the check box to

place a check mark in it. To disable automatic reports, select the check box again to remove the check mark.

14.11 CLEAR STATISTICS AFTER REPORTS PRINT: This box is dimmed unless automatic reports are enabled. If you want the statistics to be cleared every time an automatic report is printed, select this check box to place a check mark in it. To retain the statistics, remove the check mark by selecting the check box again.

14.12 MANUAL REPORT SELECTION/AUTOMATIC REPORT SELECTION: The Manual Report Selection and Automatic Report Selection portions of the window contain check boxes that allow you to select what reports to print (manually or automatically). To enable a report, select the check box to place a check mark in it. To disable the report, select it again to remove the check mark.

14.13 DIRECTORY SORT ORDER: *(Available only if Directory Listing Reports are selected.)* The Directory Sort Order drop down list boxes allow you to select First Name, Last Name, or Directory Number sorting order. Select the appropriate drop-down list box and scroll the highlight bar to the desired option.

FIGURE 3-1. APPLICATION STATISTICS REPORT SAMPLE

APPLICATION STATISTICS

Date: xx/xx/xxxx

		Day Monxx	Day Monxx	Day Monxx	Day Monxx	Day Monxx	Day Monxx
[description]	(xxx)						
Incoming Calls		---	---	---	---	---	---
Outgoing Calls		---	---	---	---	---	---
Connect Minutes		---	---	---	---	---	---
Minutes / Call		---	---	---	---	---	---
Transfers to Operator		---	---	---	---	---	---
Call Routing Ann.							
[description]	(xxx)	---	---	---	---	---	---
[description]	(xxx)	---	---	---	---	---	---
[description]	(xxx)	---	---	---	---	---	---
Call-Routing Totals							
Incoming Calls		---	---	---	---	---	---
Connect Minutes		---	---	---	---	---	---
Minutes / Call		---	---	---	---	---	---
Totals							
Incoming Calls		---	---	---	---	---	---
Connect Time (HH:MM)		---	---	---	---	---	---
Minutes / Call		---	---	---	---	---	---
Transfers to Operator		---	---	---	---	---	---
VM Msgs Left		---	---	---	---	---	---

Cumulative statistics since reports were last cleared on xx/xx/xxxx

Totals:

Calls	xxx
Messages Left	xxx
Transfers to Operator	xx

APPLICATION STATISTICS - PORT ACTIVITY

Date: xx/xx/xxxx

	Day Monxx	Day Monxx	Day Monxx	Day Monxx	Day Monxx	Day Monxx
All ports busy:						
07:00 - 07:30 AM	---	---	---	---	---	---
07:30 - 08:00	---	---	---	---	---	---
08:00 - 08:30	---	---	---	---	---	---
...						
04:00 - 04:30	---	---	---	---	---	---
04:30 - 05:00	---	---	---	---	---	---
05:00 - 05:30	---	---	---	---	---	---
05:30 - 06:00	---	---	---	---	---	---
Off Peak Hours	---	---	---	---	---	---
Total hours/minutes all ports busy:	---	---	---	---	---	---

FIGURE 3-2. DIRECTORY LISTING REPORT SAMPLES

DIRECTORY LISTING BY FIRST NAME

Date: xx/xx/xxxx

<u>Description</u>	<u>Directory Number</u>	<u>Notification Station</u>	<u>Mailbox</u>
ARTHUR GOODMAN	242		U
LAB LAB	200		
MARK FONTANA	272	101	X
MARK HARRIS	216	100	P
NORMA EATON	100	100	X
TODD LINEN	215	100	P/U

DIRECTORY LISTING BY LAST NAME

Date: xx/xx/xxxx

<u>Description</u>	<u>Directory Number</u>	<u>Notification Station</u>	<u>Mailbox</u>
EATON, NORMA	100	100	X
FONTANA, MARK	272	101	X
GOODMAN, ARTHUR	242		U
HARRIS, MARK	216	100	P
LAB, LAB	200		
LINEN, TODD	215	100	P/U

DIRECTORY LISTING BY DIRECTORY NUMBER

Date: xx/xx/xxxx

<u>Directory Number</u>	<u>Notification Station</u>	<u>Mailbox</u>	<u>Description</u>
100	100	X	EATON, NORMA
200			LAB, LAB
215	100	P/U	LINEN, TODD
216	100	P	HARRIS, MARK
242		U	GOODMAN, ARTHUR
272	101	X	FONTANA, MARK

FIGURE 3-3. GROUP LIST REPORT SAMPLE

GROUP LIST REPORT

Date: xx/xx/xxxx

Group List Number: xxx

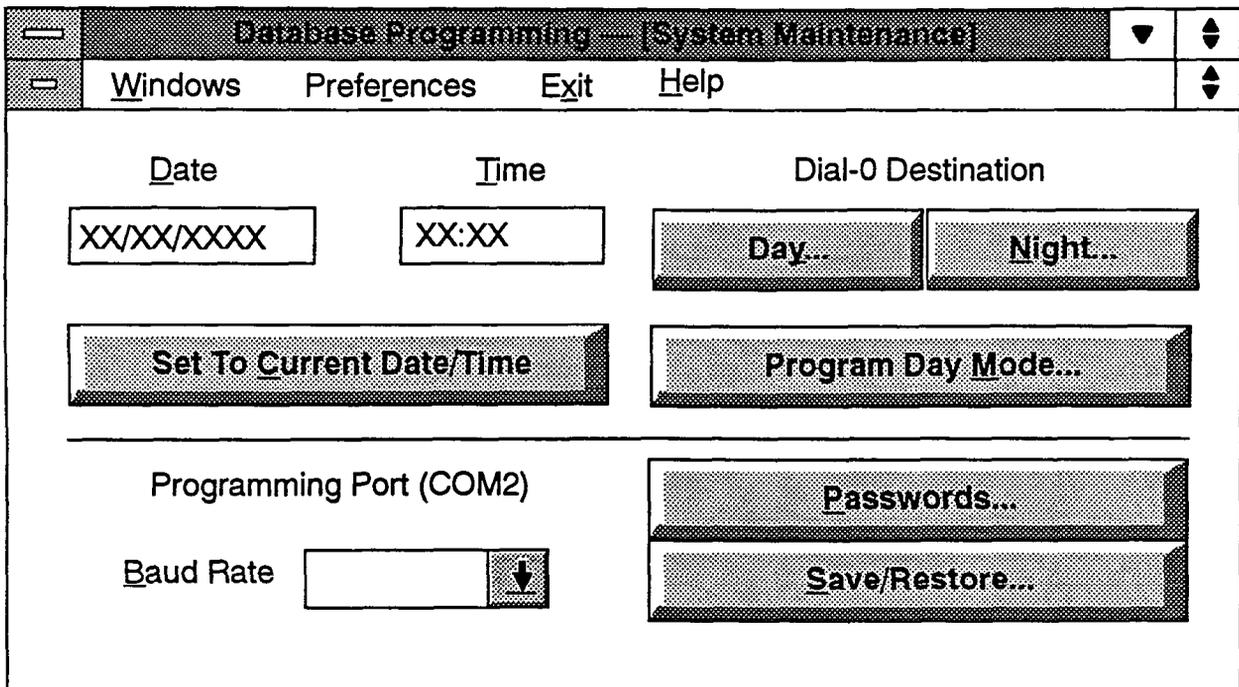
Name: [description]

Mailboxes: xxx

[subscriber description]

xxx

[subscriber description]



15. SYSTEM MAINTENANCE

15.1 This window is displayed when System Maintenance is selected from the programming options menu. It is used for programming the dial-0 operator destination for the Voice Mail and Automated Attendant applications (where calls are sent if the caller presses 0), for setting the time and date, for setting the baud rate of the COM port, programming passwords, and for saving/restoring the database. A program planning sheet is located in Figure 3-10, on page 3-77.

15.2 DATE: The current date is shown in the Date text box. If necessary, enter a new date or edit the current date. You will see a warning if you enter an invalid date and you must try again.

15.3 TIME: The current time is shown in the Time text box. If necessary, enter a new time or edit the current time. You will see a warning if you enter an invalid time and you must try again.

15.4 SET TO CURRENT DATE/TIME: Select this command button to automatically set the date and time of the IVX500 PC to the current date and time of the programming PC.

15.5 DIAL-0 DESTINATION — DAY/NIGHT: These command buttons provide access to the windows

used for programming the type of device that will be used for the day and night operator destinations, the extension number, and the mailbox. Select the appropriate command button to program the Dial-0 destination for day or night mode. A window appears as shown on the next page.

15.6 PROGRAM DAY MODE: This command button provides access to the window that allows you to determine the days of the week and times that represent "day mode." All other days and hours are considered night mode. The window is shown on page 3-65.

15.7 BAUD RATE: To set the baud rate of COM 2 on the IVX500 PC for the next programming session, select this drop-down list box and scroll the highlight bar to the desired baud rate. **NOTE:** A change in the baud rate will not take effect until the next database programming connection. The current programming session is unaffected.

15.8 PASSWORDS: Select this command button to program the IVX500 System programming passwords. The window shown on page 3-66 appears.

15.9 SAVE/RESTORE: (This option is not available in Stand-Alone programming sessions.) To save or restore the system database, select this command button. The window shown on page 3-67 appears.

Dial-0 Destination — Day (or Night)

Destination Type Extension

Extension ↓

Mailbox

↓

OK Cancel

A. DIAL-0 DESTINATION PROGRAMMING

15.10 This window appears when you select the Day or Night command button shown on the preceding page.

15.11 DESTINATION TYPE: Select the Destination Type drop-down list box and scroll the highlight bar to the desired type (Extension, Mailbox, or None). If "Mailbox" or "Extension" is selected, the system will automatically transfer the caller to the designated mailbox or extension, when 0 is pressed. If "None" is selected, operator access will be denied from Voice Mail and Auto Attendant applications (0 will be an invalid entry).

15.12 EXTENSION: If the destination type is "Extension," you must enter the desired destination in the Extension text box. If you enter an invalid number, you will see a warning and must try again.

15.13 MAILBOX: If the destination type is "Mailbox," select the Mailbox drop-down list box and scroll the highlight bar to the desired mailbox destination.

15.14 OK/CANCEL: When the dial-0 destination is programmed, select the OK command button to exit. Or to exit without saving changes, select the Cancel command button.

Program Day Mode

Days of the Week	Time of Day
<input type="checkbox"/> Sunday	Start Time: 08:00am
<input type="checkbox"/> Monday	Stop Time: 05:00pm
<input type="checkbox"/> Tuesday	
<input type="checkbox"/> Wednesday	
<input type="checkbox"/> Thursday	
<input type="checkbox"/> Friday	
<input type="checkbox"/> Saturday	

OK Cancel

B. DAY MODE PROGRAMMING

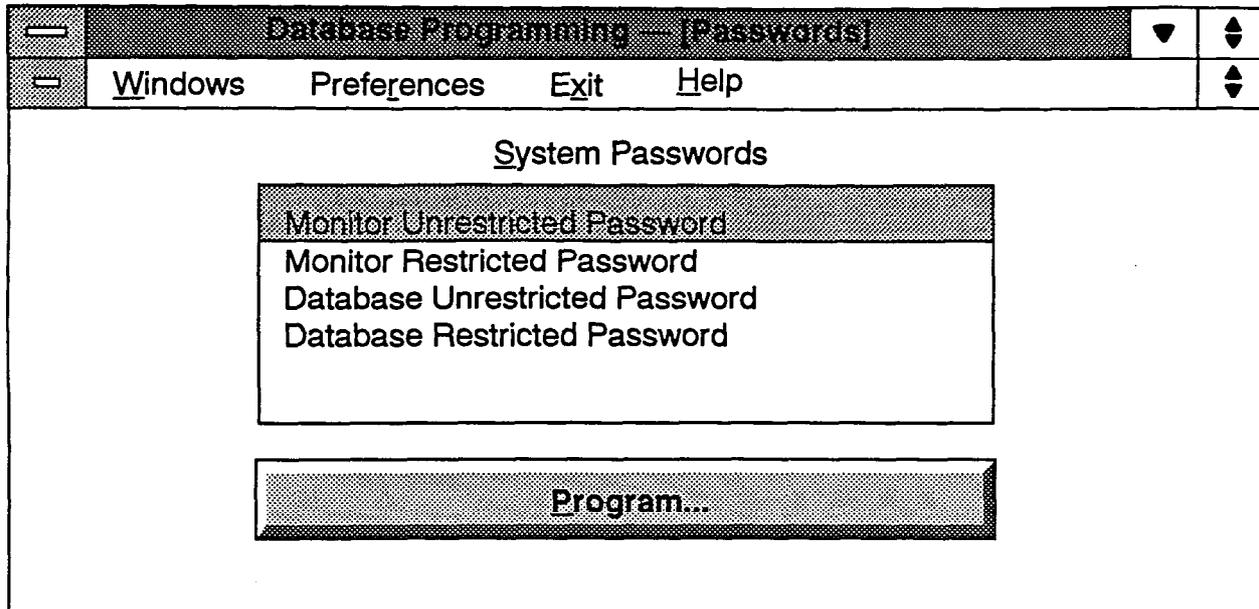
15.15 This window appears when you select the Program Day Mode command button shown on page 3-63.

15.16 DAYS OF THE WEEK: Select the days of the week during which you wish to have the system operate in day mode. When you select a check box, a check mark appears to indicate that it is a day-mode day. To remove a check mark, select the check box again.

15.17 START/STOP TIME: To determine the time period during which day mode will be in effect on the

selected day-mode days, enter a start and stop time in the appropriate text boxes. Use 12-hour format followed by "am" or "pm," or use 24-hour format. If you enter an invalid time, you will see a warning message and must try again.

15.18 OK/CANCEL: When day mode programming is complete, select the OK command button. Or, to exit without changing any information, select the Cancel command button.



C. PASSWORDS

15.19 To set passwords, select Passwords from the menu. The system database can have two passwords: Restricted and Unrestricted. (The Monitor Restricted and Monitor Unrestricted passwords are reserved for future use.)

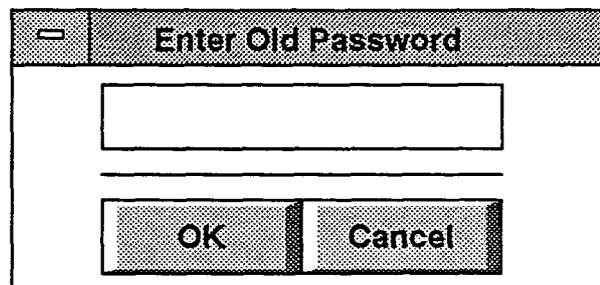
- **Database Restricted:** When the Database Programming Restricted password is entered, the user cannot make changes in the database. However, the user can execute Report Programming.
- **Database Unrestricted:** A user who enters the Database Programming Unrestricted password can make programming changes in any area.

15.20 If the restricted password is enabled but the unrestricted password is not, a warning appears because that situation would allow unrestricted access to the database. The programmer must determine whether to leave the passwords programmed as they are (select OK) or go back and program the missing password (select Cancel).

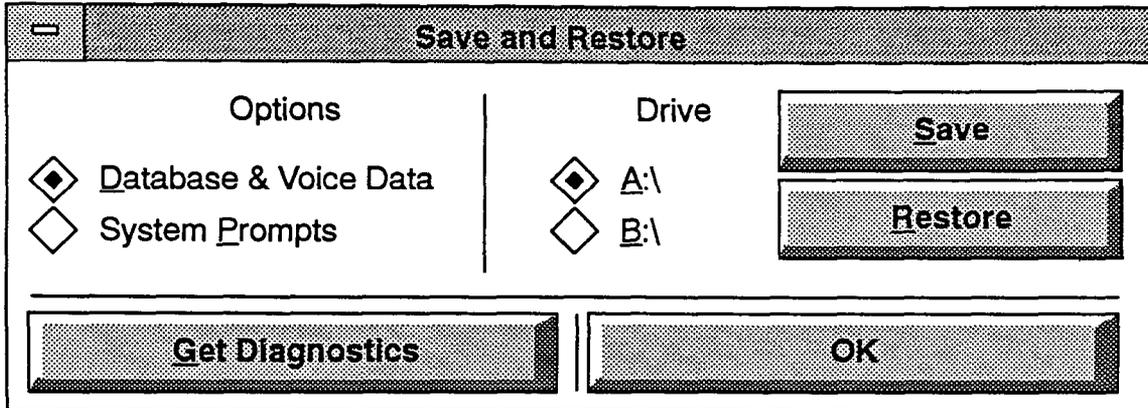
15.21 A program planning sheet is located in Figure 3-10, on page 3-77.

15.22 **PASSWORDS:** Choose the password to be programmed by highlighting the desired line in the Password list box and then selecting the Program command button. The following window will appear. Enter the old

password. If the password is correct, the window header then changes to "Enter New Password." Enter the new password as described below.



- **PASSWORD:** Enter the password of up to 8 characters. The characters will not appear on the screen when typed. The system is not case sensitive; you may use upper or lower case characters. To remove an existing password, simply move the cursor to the text box and, without pressing any additional keys, press RETURN.
- **OK:** After typing the password, select the OK command button. The window heading will change to "Verify New Password" and you must retype the password as before. If the entered passwords match, you will return to the Password window, if not, you must re-enter the new password and verify it again.
- **CANCEL:** If you make a mistake while entering the password or wish to leave it unchanged, select the Cancel command button.



D. SAVE AND RESTORE

15.23 This window appears when you select the Save/Restore command button shown on the preceding page.

15.24 To ensure that you have enough diskettes for saving the data, check the Disk Usage Statistics report (as shown on page 3-49) to determine the number of minutes used for the prompts and messages. Each diskette will hold 5-6 minutes of prompts or messages. To calculate the number of diskettes needed, divide the number of minutes used (shown in the statistics) by 5.

15.25 OPTIONS: Determine which information you want to save or restore (Database & Voice Data or System Prompts). Selecting the desired option places a dot in the option button. The data included in the options are as follows:

OPTION	SAVE	RESTORE
Database & Voice Prompts	The system database as well as all custom recordings and messages will be saved to the selected drive.	The system database and custom recordings and messages contained on the selected drive will overwrite the current database and prompts, if any.
System Prompts	The current customer-recorded prompts will be saved to the selected drive.	The customer-recorded prompts contained on the disk in the selected drive will overwrite the current prompts, if any.

15.26 DRIVE: Determine which drive on the IVX500 PC (not the programming PC) will be the save destination or restore source. Selecting the desired drive places a dot in the option button. *Be sure to place a diskette in the correct drive on the IVX500 PC before selecting the Save or Restore command button.*

15.27 SAVE or RESTORE: Determine the operation you wish to perform and select the appropriate command button. The following windows appear.

- Each operation begins with a window that asks if you are sure you wish to continue. Select Yes or No. A restore operation will read from the specified drive on the IVX500 PC; a save operation will save information to the disk in that drive.
- When a save operation is completed, a window asks if you wish to perform another operation. If you answer Yes, it returns to the window shown above. If you answer No, it asks you to remove the disk and then disconnects the session and returns to the logo window.
- When a restore operation is complete, the programming PC disconnects the session and returns to the logo screen.

15.28 GET DIAGNOSTICS: This command button is the same as the diagnostics report command available from the System Administrator's mailbox (feature code 520). It sends copies of diagnostics files (Output.001-Output.007) to the selected drive.

15.29 OK: When finished will all save and restore operations, select the OK command button to return to the window shown on the preceding page.

NOTE: The applications will not be usable during a System Prompts save or restore and callers will receive reorder tones. This is necessary to prevent users from making new recordings and causing database errors.

FIGURE 3-4. APPLICATION AND PORT PROGRAMMING (APP OR PORT)

APPLICATIONS: (Duplicate and fill in this form for each Application.)

FIELD	INFORMATION
Extension	
Application Type	
Description	
Day Greeting	
Night Greeting	
Digit Translation (Enter action and, if applicable, destination.) ● The Actions that can be selected for digits *, #, and 0-9 and for Timeout are: — <i>Transfer To Operator</i> — <i>Company Directory - First Name</i> — <i>Company Directory - Last Name</i> — <i>Subscriber Access</i> — <i>Invalid</i> — <i>Transfer To Extension</i> — <i>Transfer To Mailbox</i> — <i>Transfer To Collected Extension</i> — <i>Hang Up</i>	#:
	*:
	0:
	1:
	2:
	3:
	4:
	5:
	6:
	7:
	8:
	9:
Timeout:	Timer value: sec

FIGURE 3-4. APPLICATION AND PORT PROGRAMMING (Continued)

PORTS: *(Duplicate and fill in this form for each Port.)*

FIELD	INFORMATION
Port Number	
Port Operation Type	
Remote Messaging/Lamp Notification	Yes or No
Number of Rings Before Answer — Day Mode	
Number of Rings Before Answer — Night Mode	

FIGURE 3-7. MAILBOX PROGRAMMING (MAIL OR MB)

TO USE: (Make sufficient copies of this page and fill in information for each mailbox.)

FIELD	INFORMATION
Mailbox Number	
Mailbox is Associated	Yes or No
Mailbox Type	Standard or Receive Only
Description	
Message Notification Station	
Enable Remote Messaging?	Yes or No
Password	
Primary Message Notification:	Enabled: Yes or No
	Notification Number:
	Start Time: Stop Time:
	Notification Type: Personal or Pager
	Notification Category: Each New or Priority
	Days of the Week: Sun Mon Tue Wed Thu Fri Sat
	Remote Notification Table:
Alternate Message Notification:	Enabled: Yes or No
	Notification Number:
	Start Time: Stop Time:
	Notification Type: Personal or Pager
	Notification Category: Each New or Priority
	Days of the Week: Sun Mon Tue Wed Thu Fri Sat
	Remote Notification Table:
Miscellaneous	Maximum Mailbox Message Capacity (1-120 minutes):
	Maximum Non-Subscriber Message Length (1 min.-Max. Capacity):
	Maximum Outgoing Message Length (1-120 minutes):
	Greeting: Primary or Alternate or System
	Play Recording Instructions: Yes or No
	Envelope Settings: Date/Time - Message Source - Message Length
	Directory Information: Unlisted No. Private Ext. and Mailbox No.

FIGURE 3-8. MISCELLANEOUS PROGRAMMING (MISC)

AUTO ATTENDANT INFORMATION:

FIELD	INFORMATION
Enable Auto Attendant Directory?	Yes <i>or</i> No
Directory Sort Order	Last Name <i>or</i> First Name

CUSTOM RECORDINGS:

REC #	DESCRIPTION	REC #	DESCRIPTION
01		26	
02		27	
03		28	
04		29	
05		30	
06		31	
07		32	
08		33	
09		34	
10		35	
11		36	
12		37	
13		38	
14		39	
15		40	
16		41	
17		42	
18		43	
19		44	
20		45	
21		46	
22		47	
23		48	
24		49	
25		50	

FIGURE 3-8. MISCELLANEOUS PROGRAMMING (Continued)

TELEPHONE SYSTEM INTERFACE:

FIELD	INFORMATION
System Type	
Voice Talk Support?	Yes or No
Feature Codes	Transfer:
	Reconnect:
	Message Lamp:
	Message Lamp Cancel:
	Call Initiation:

REMOTE NOTIFICATION TABLES: *(Make a copy of this chart for each Remote Notification Table.)*

FIELD	INFORMATION
Remote Notification Table Number:	
Description	
Pager Answer String	
Pager LCD Number Display String	
Pager Termination String	
Outgoing Access String	
Outgoing Access Termination String	

VOICE MAIL INFORMATION:

FIELD	INFORMATION
System Administrator Mailbox	
Enable Voice Mail Directory	Yes or No
Directory Sort Order	Last Name or First Name
Volume	

FIGURE 3-8. MISCELLANEOUS PROGRAMMING (Continued)

TIMERS:

TIMER	DEFAULT	RANGE	NEW VALUE
Busy Tone Cycle Detect	2	1-60 cycles	
Call Progress Detection	4000	1-6000 hundredths	
Call Progress Dialtone Duration	2	1-5 seconds	
Call Progress Dialtone Wait	5	1-10 seconds	
Call-In-Progress Dialtone	2	0-5 seconds	
Dialed Pause Duration	300	1-500 hundredths	
DTMF Delay	32	16-240 milliseconds	
DTMF Detect	32	16-240 milliseconds	
Hookflash Duration	60	1-100 hundredths	
Lamp Update Delay	10	1-30 seconds	
Loop Current Loss	100	1-1000 hundredths	
Maximum Greeting Length	1	1-15 minutes	
Minimum Ring Signal Off	5	1-100 tenths	
Minimum Ring Signal On	3	1-100 tenths	
Minimum Time Between Incoming Calls	80	1-100 tenths	
Notification No-Answer Detection	4	1-25 rings	
Number Called Busy	5	1-255 minutes	
Off-Hook Delay	0	0-5 seconds	
Outgoing DTMF Digit Duration	60	3-250 milliseconds	
Pager Notification Retry	20	1-255 minutes	
Pause Voice Mail	30	1-240 seconds	
Personal Number No Answer	30	1-255 minutes	
Replay Forward/Rewind Increment	5	1-60 seconds	
Shortest Message Allowed	3	1-5 seconds	
Voice Computer Hunt Group Dial String	1	1-5 seconds	
Voice Talk Feedback	5	1-30 seconds	

FIGURE 3-9. REPORT PROGRAMMING (REP)

FIELD	INFORMATION
Output Device	
File	
Manual Report Generation:	Application and Port Statistics? Yes or No
	Directory Listing Reports? Yes or No
	Group List Report? Yes or No
	Directory Sort Order: Last Name or First Name
Automatic Report Generation:	Print Day:
	Print Time:
	Enable Automatic Reports? Yes or No
	Clear Statistics After Reports Print? Yes or No
	Application and Port Statistics? Yes or No
	Directory Listing Reports? Yes or No
	Group List Report? Yes or No
	Directory Sort Order: Last Name or First Name

FIGURE 3-10. SYSTEM MAINTENANCE (SYS OR MAINT)

Dial-0 Destination:

FIELD	INFORMATION
Programming Port (COM 2) Baud Rate	
Dial-0 Day Destination Type	Extension <i>or</i> Mailbox <i>or</i> None
Dial-0 Day Destination	
Dial-0 Night Destination Type	Extension <i>or</i> Mailbox <i>or</i> None
Dial-0 Night Destination	
Day Mode Days	
Day Mode Start and Stop Times	

Passwords:

PASSWORD TYPE	PASSWORD
Database Restricted	
Database Unrestricted	

APPLICATION AND TELEPHONE SYSTEM SETUP

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1. INTRODUCTION

1.1 This section gives basic setup instructions for each of the IVX500 application types. Setup instructions are given for the following types of applications:

- Automated Attendant
- Automated Attendant Recall Destination
- Call Routing Announcement
- Quick Message Retrieval
- Non-Subscriber Voice Mail

1.2 The FEATURES section give full descriptions of these applications and any applicable user procedures.

1.3 This section also gives the hardware and programming requirements necessary for installing the IVX500 on each of the Inter-Tel and Premier systems shown in the Telephone System Interface programming window. These instructions begin on page 4-12. The systems discussed in this section include the following:

- Inter-Tel And Premier 256- And 416/832-Port Systems (IMX 256, IMX 416/832, GMX 256, GMX 416/832, ESPDX, and ESPMDX)
- Inter-Tel IMX 1224/2460 And Premier ESP Systems
- Inter-Tel GMX-48 And IMX 2448 Systems
- Inter-Tel GMX-152D System
- Inter-Tel GLX-Plus System
- Inter-Tel AXXESS System

2. USING VOICE COMPUTER HUNT GROUPS AND VOICE TALK

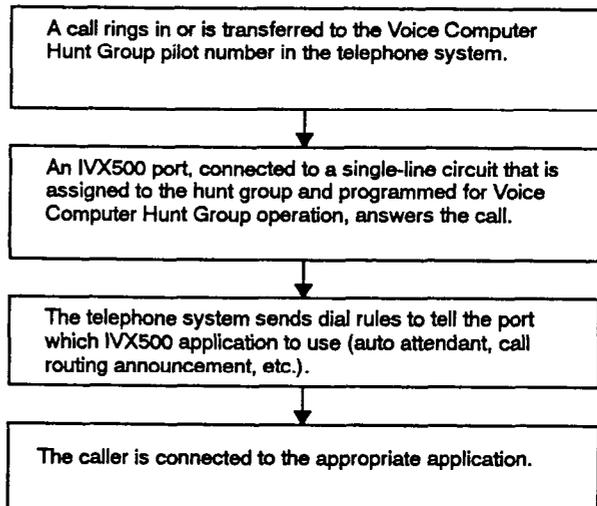
2.1 Some Inter-Tel and Premier telephone systems have Voice Computer Hunt Groups and/or a DTMF feedback feature called Voice Talk. These features work with the IVX500 System to provide a more efficient user interface for the IVX500 applications. Several instructions in this section refer to programming dial rules. The following is an explanation of how the voice computer hunt groups use dial rules.

A. HOW DO VOICE COMPUTER HUNT GROUPS WORK?

2.2 With a voice computer interface, the ports on the IVX500 do not have to be assigned to specific applica-

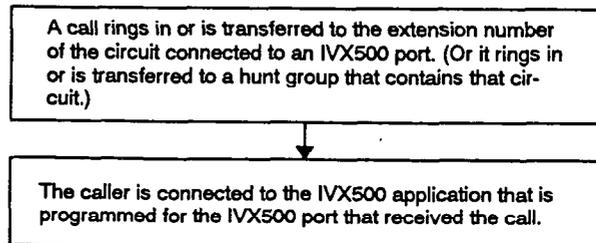
tions. They are assigned as "Voice Computer Hunt Group" ports in the IVX500 database. When the voice computer hunt group receives a call, the telephone system sends dial rules that tell the IVX500 which application to use. Therefore, the telephone system can have several voice computer hunt groups that all contain the same single-line circuits connected to IVX500 ports. The dial rules for each voice computer hunt group act as the "navigator" for the calls, directing them to the desired application.

WITH VOICE COMPUTER HUNT GROUPS



2.3 On systems without voice computer hunt groups, each port is dedicated to a specific application. The application is accessed by dialing the extension number of the circuit connected to the associated port. (On some systems the circuits can be placed in hunt groups or in forwarding arrangements that function like hunt groups.) Because each port can have only one application, systems without voice computer hunt groups may require IVX500 systems with more ports to provide all of the services required by the customer.

WITHOUT VOICE COMPUTER HUNT GROUPS



B. WHAT DO THE DIAL RULES DO?

2.4 Voice Computer Hunt Groups use special dial rules that tell the IVX500 which application to use (Automated Attendant, Recall Destination, Call Routing Announcement, Quick Message Retrieval, or Non-Subscriber Voice Mail).

2.5 The single-line circuits connected to IVX500 ports can be assigned as members of several different Voice Computer Hunt Groups, each with its own set of dial rules.

2.6 When programmed, the Voice Computer Hunt Group's dial rule string should contain up to three "fields," entered using this format:

"<IVX500 application number>#", 4, "#", 1, "#"
FIELD 1 FIELD 2 FIELD 3

2.7 In some applications dial rule 4 is not needed or is substituted with dial rule 15. The three "#" symbols indicate the ends of the fields. The dial rule fields are defined as follows:

- **Field 1 — The IVX500 Application number:** The application's IVX500 number (assigned in PROGRAMMING, page 3-20) is identified in the dial rule (followed by a #) in quotation marks. The application number tells the IVX500 System which application to use (Automated Attendant, Voice Mail, Call Routing, etc.). For example, if the voice computer hunt group was set up to access an Automated Attendant application with number 275 in the IVX500 database, the hunt group would use dial rule "275#". Use the number that is programmed for the desired application in the IVX500 System, not the telephone system pilot number or an extension number of a single-line circuit connected to an IVX500 port.

- **Field 2 — (Optional) The dial rule that identifies the destination extension or recall source:** Use one of the following dial rules, followed by a pound sign in quotation marks ("#").

— *For all applications except the Automated Attendant Recall Destination:* Use the "original-destination extension" dial rule. (This is dial rule 4 in the Inter-Tel and Premier systems.) This dial rule identifies the station that was originally called if several stations have chained forwards that end at voice mail. For example: If someone dialed extension 200, which was forwarded to extension 202 which was in turn forwarded to the

voice computer hunt group, the telephone system would tell the IVX500 System that the call was originally intended for extension 200 and would not indicate that the call came from 202.

- *For Automated Attendant Recall Destinations:* Use the "recall source" dial rule (dial rule 15 in the Inter-Tel and Premier systems). This dial rule dials the intercom number of the station that received a transfer recall. The basic operation is the same as dial rule 4, described above, except that this rule is intended for entering the voice computer hunt group through a recall and dial rule 4 is for entry through direct dialing.

NOTE: If this field is not used, you can enter only "#" for Field 2. Or you can enter an extra # after the application number in Field 1 ("XXX##").

- **Field 3 — The dial rule that identifies the originating extension:** This dial rule indicates the extension number where the call originated. For example, if extension 200 called the voice computer hunt group, the dial rule would identify the call as originating at 200. This is dial rule 1 in Inter-Tel and Premier systems. Follow this dial rule with a pound sign in quotation marks ("#") to mark the end of the dial rule field. If the telephone system sends 1-5 digits in this field, the IVX500 System will know the call is coming from an extension and will not play the company greeting. If it contains 0 or more than six digits, an unknown or outside source is assumed and the company greeting will play.

2.8 Do not include an asterisk (*) in a dial rule string. The asterisk is interpreted by the IVX500 System as a disconnect signal.

C. WHAT IS VOICE TALK?

2.9 On some systems, the progress tones that are normally sent to the voice mail application can be replaced with Voice Talk DTMF "feedback" tones. These tones can be utilized by the voice computer to determine call status such as whether the call is ringing, has been answered, has been disconnected, or if the called station is in do-not-disturb, busy, or forwarded to an outside telephone number. This feedback allows the telephone system and IVX500 to efficiently communicate about call progress.

2.10 Extended DTMF tones can also be enabled. They include codes for indicating when a station is forwarded to another station and when the calling party hangs up.

3. APPLICATION SETUP INSTRUCTIONS

A. AUTOMATED ATTENDANT

3.1 The Automated Attendant application provides a standard automated call answering service for calls that it receives through transfers, forwards, and direct ring-ins. When the Automated Attendant answers a call, it plays a greeting followed by a custom recording that gives dialing instructions. The caller may then directly dial a station extension number, application extension number, or hunt group pilot number.

3.2 To set up an Automated Attendant application, follow these steps:

- IVX
- (1) Create the application using the programming window shown on page 3-19. Enter the desired extension number for the application (do not use a number that is already assigned to another application).
 - (2) When the application programming window shown on page 3-21 appears, enter a description for the application and select Custom Recording numbers for day and night modes. (The recordings will be made in step 10. Recording descriptions are programmed as shown on page 3-48.)
 - (3) Program the Automated Attendant directory information as described on page 3-47.
 - (4) Create a Automated Attendant Recall Destination for the Automated Attendant application, as described on the next page.
 - (5) For stations to receive calls through the Automated Attendant application, they must have a mailbox or extension ID programmed to match their telephone system extension number. See page 3-35 for mailbox programming instructions and page 3-27 for extension ID programming instructions.
 - (6) Program the IVX500 ports, as described on page 3-25. Set the Port Operation field to "Voice Computer Hunt Group" if the telephone system will be programmed to send voice computer dial rules; set it to "Automated Attendant" if the telephone system does not have voice computer hunt groups. If desired, change the Number of Rings Before Answer field. The Remote Messaging/Lamp Notification option should also be enabled.

- (7) **Systems without Voice Computer Hunt Groups:** If desired, program one or more single-line circuits connected to IVX500 Automated Attendant ports as members of hunt group in the telephone system.

Systems with Voice Computer Hunt Groups: If the telephone system has voice computer hunt group capabilities, the single-line circuits connected to the IVX500 ports can be placed in a voice computer hunt group that uses dial rules. Follow the instructions for your specific telephone system, located in this chapter. (For additional information regarding dial rules, also refer to page 4-4.) When programming the dial rules for the voice computer hunt group, use the following format.

`"<XXX>##", 1, "#"`

In place of the XXX, use the number that is programmed for the Automated Attendant application in the IVX500 System in step 1, not the telephone system extension number of the single-line circuit connected to the ports.

- (8) If the customer wants calls to ring in directly to the Automated Attendant application, program the appropriate telephone system trunks to ring in to the single-line circuit extension number(s) or hunt group pilot number associated with the application.
- (9) In the telephone system, program the single-line circuit or pilot number associated with the Automated Attendant Recall Destination (created in step 4) to serve as the recall destination for the of the Automated Attendant circuits or hunt group.
- (10) Using the Voice Mail System Administrator's mailbox, record the greetings for the Automated Attendant application. Follow the instructions given on page 2-18. When the prompt asks for the recording number, enter the number for the day or night greeting that you selected in step 2.
- (11) Place intercom and CO calls to the Automated Attendant (use the extension and/or hunt group pilot number) to ensure that the correct greetings are played during day and night modes and that the mailboxes and extension numbers can be accessed. Allow at least one call to recall the Automated Attendant Recall Destination so that you can verify that it works correctly.

B. AUTOMATED ATTENDANT RECALL DESTINATION

3.3 If a call is transferred by the Automated Attendant application, but is not answered before the telephone system Transfer timer expires, the call recalls the Recall Destination application. If the recall destination is the Automated Attendant Recall Destination application, it announces that the station is unavailable and allows the caller to choose to leave a message (if a mailbox is programmed for that station) or dial another extension number.

- (1) Create the application using the programming window shown on page 3-19. Enter the desired extension number for the application (do not use a number that is already assigned to another application).
- (2) When the application programming window shown on page 3-21 appears, enter a description for the application. Recordings are not needed; the system will use standard pre-recorded prompts.
- (3) Program the IVX500 ports, as described on page 3-25. Set the Port Operation field to "Voice Computer Hunt Group" if the telephone system will be programmed to send voice computer dial rules; set it to "Automated Attendant Recall Destination" if the telephone system does not have voice computer hunt groups. If desired, change the Number of Rings Before Answer field. The Remote Messaging/Lamp Notification option should also be enabled.

- (4) For stations to receive calls through the Automated Attendant Recall Destination application, they must have a mailbox or extension ID programmed to match their telephone system extension number. See page 3-35 for mailbox programming instructions and page 3-27 for extension ID programming instructions.
- (5) **Systems without Voice Computer Hunt Groups:** If desired, program one or more single-line circuits connected to IVX500 Automated Attendant Recall Destination ports as members of a hunt group in the telephone system.

Systems with Voice Computer Hunt Groups: If the telephone system has voice computer hunt group capabilities, the single-line circuits connected to the IVX500 ports can be placed in a voice computer hunt group that uses dial rules. Follow the instructions for your specific telephone system, located in this chapter. (For additional information regarding dial rules, also refer to page 4-4.) When programming the dial rules for the voice computer hunt group, the following format.

"<XXX>#", 15, "6666", 1, "666666"

In place of the *XXX*, use the number that is programmed for the Automated Attendant Recall Destination application *in the IVX500 System* in step 1, not the telephone system extension number of the single-line circuit connected to the ports.

C. CALL ROUTING ANNOUNCEMENT

3.4 A Call Routing Announcement application can be used in two ways:

- **Playback device:** The playback device function is especially useful for programming hunt group announcement and overflow stations. When called, the Call Routing Announcement application will play a recording and then hang up. Setup instructions for this type of Call Routing Announcement application are shown below.
- **Customized call routing with single-digit translation:** As an option, the Call Routing Announcement application can use Digit Translation. This feature allows the caller to press a single digit for access to an extension, a mailbox, the voice mail subscriber application, the operator, the directory, or to a station or hunt group that has an associated mailbox or extension ID. Setup instructions for this type of Call Routing Announcement application are shown on the next page.

Playback Device Setup

3.5 Use the following procedure to set up a playback device Call Routing Announcement application.

- (1) Create the application using the programming window shown on page 3-19. Enter the desired extension number for the application (do not use a number that is already assigned to another application).
- (2) When the application programming window shown on page 3-21 appears, enter a description for the application and select recording numbers for day and night modes. (The recordings will be made in step 6. Recording descriptions are programmed as shown on page 3-48.) Do not program any digit translation information.
- (3) Program the IVX500 ports, as described on page 3-25. Set the Port Operation field to "Voice Computer Hunt Group" if the telephone system will be programmed to send voice computer dial rules; set it to "Call Routing Announcement" if the telephone system does not have voice computer hunt groups. If desired, change the Number

of Rings Before Answer field. The Remote Messaging/Lamp Notification option should also be enabled.

- (4) **Systems without Voice Computer Hunt Groups:** If desired, program one or more single-line circuits connected to IVX500 Call Routing Announcement ports as members of a hunt group in the telephone system.

Systems with Voice Computer Hunt Groups: If the telephone system has voice computer hunt group capabilities, the single-line circuits connected to the IVX500 ports can be placed in a voice computer hunt group that uses dial rules. Follow the instructions for your specific telephone system, located in this chapter. (For additional information regarding dial rules, also refer to page 4-4.) When programming the dial rules for the voice computer hunt group, use the following format.

"<XXX>##", 1, "#"

In place of the *XXX*, use the number that is programmed for the Call Routing Announcement application *in the IVX500 System* in step 1, not the telephone system extension number of the single-line circuit connected to the ports.

- (5) If the customer wants calls to ring in directly to the Call Routing Announcement application, program the appropriate telephone system trunks to ring in to the single-line circuit extension number(s) or hunt group pilot number associated with the application.
- (6) Using the Voice Mail System Administrator's mailbox, record the greetings for the Call Routing Announcement application. Follow the instructions given on page 2-18. When the prompt asks for the recording number, enter the number for the day or night greeting that you selected in step 2.
- (7) Place calls to the Call Routing Announcement (use the extension and/or hunt group pilot number) to ensure that the correct recordings are played during day and night modes.

Customized Call Routing (Digit Translation) Setup

3.6 Use the following procedure to set up a Call Routing Announcement Application that uses the Digit Translation feature.

- (1) Create the application using the programming window shown on page 3-19. Enter the desired extension number for the application (do not use a number that is already assigned to another application).
- (2) When the application programming window shown on page 3-21 appears, enter a description for the application and select recording numbers for day and night modes. (The recordings will be made in step 8. Recording descriptions are programmed as shown on page 3-48.) Select the Digit Translation command button and program the digit translation destinations as described on page 3-22. Also ensure that the Timeout timer is set to the desired value, as described on page 3-23.
- (3) If you used the action "Transfer To Operator" in your digit translation table, refer to the System Maintenance window shown on page 3-63. Make sure that the Dial-0 Destinations for day and night mode are set to the correct extensions or mailboxes.
- (4) For stations to receive calls through the Call Routing Announcement application, they must have a mailbox or extension ID programmed to match their telephone system extension number. See page 3-35 for mailbox programming instructions and page 3-27 for extension ID programming instructions.
- (5) Program the IVX500 ports, as described on page 3-25. Set the Port Operation field to "Voice Computer Hunt Group" if the telephone system will be programmed to send voice computer dial rules; set it to "Call Routing Announcement" if the telephone system does not have voice computer hunt groups. If desired, change the Number of Rings Before Answer field. The Remote Messaging/Lamp Notification option should also be enabled.

- (6) **Systems without Voice Computer Hunt Groups:** If desired, program one or more single-line circuits connected to IVX500 Call Routing Announcement ports as members of a hunt group in the telephone system.

Systems with Voice Computer Hunt Groups: If the telephone system has voice computer hunt group capabilities, the single-line circuits connected to the IVX500 ports can be placed in a voice computer hunt group that uses dial rules. Follow the instructions for your specific telephone system, located in this chapter. (For additional information regarding dial rules, also refer to page 4-4.) When programming the dial rules for the voice computer hunt group, use the following format.

"<XXX>##", 1, "#"

In place of the *XXX*, use the number that is programmed for the Call Routing Announcement application *in the IVX500 System* in step 1, not the telephone system extension number of the single-line circuit connected to the ports.

- (7) If the customer wants calls to ring in directly to the Call Routing Announcement application, program the appropriate telephone system trunks to ring in to the single-line circuit extension number(s) or hunt group pilot number associated with the application.
- (8) Using the Voice Mail System Administrator's mailbox, record the greetings for the Call Routing Announcement application. Follow the instructions given on page 2-18. When the prompt asks for the recording number, enter the number for the day or night greeting that you selected in step 2.
- (9) Place CO calls to the Call Routing Announcement (use the extension and/or hunt group pilot number) to ensure that the correct greetings are played during day and night modes and that the mailboxes and extension numbers can be accessed.

D. QUICK MESSAGE RETRIEVAL

3.7 Only one Quick Message Retrieval application may be created for the system. It serves as the alternate message source for the voice mail system so that subscribers can have easy access to their mailboxes when retrieving messages. It can also be dialed directly by station users for quick access to associated mailboxes.

- (1) Create the application using the programming window shown on page 3-19. Enter the desired extension number for the application (do not use a number that is already assigned to another application).
- (2) When the application programming window shown on page 3-21 appears, enter a description for the application. This application does not require recordings.
- (3) Program the IVX500 port, as described on page 3-25. Set the Port Operation field to "Voice Computer Hunt Group" if the telephone system will be programmed to send voice computer dial rules; set it to "Quick Message Retrieval" if the telephone system does not have voice computer hunt group. Enable the Remote Messaging/Lamp Notification option. If desired, change the Number of Rings Before Answer field.
- (4) **Systems without Voice Computer Hunt Groups:** If desired, program the single-line circuit connected to Quick Message Retrieval port as the only member of a hunt group in the telephone system.

Systems with Voice Computer Hunt Groups: If the telephone system has voice computer hunt group capabilities, the single-line circuits connected to the IVX500 ports can be placed in a voice computer hunt group that uses dial rules. Follow the instructions for your specific telephone system, located in this chapter. (For additional information regarding dial rules, also refer to page 4-4.) When programming the dial rules for the voice computer hunt group, use the following format.

"<XXX>##", 1, "#"

In place of the *XXX*, use the number that is programmed for the Quick Message Retrieval application *in the IVX500 System* in step 1, not the telephone system extension number of the single-line circuit connected to the ports.

- (5) In the telephone system, assign the Quick Message Retrieval extension or pilot number as the alternate message source for all of the single-line circuits connected to the IVX500 ports.
- (6) Test the Quick Message Retrieval application by leaving a message in a mailbox. When the station user (Subscriber) associated with the mailbox responds to the message, the call should be sent to the Quick Message Retrieval application. The application should access the correct mailbox and request the Subscriber's password.

E. NON-SUBSCRIBER VOICE MAIL

3.8 This application handles all non-subscriber calls that are directed to voice mail. Callers will hear the main company greeting, followed by a menu of available options. In telephone systems with voice computer hunt groups, internal callers will hear only the menu of options, and not the company greeting. Stations can forward or transfer calls directly to their mailbox using this application's extension number.

- (1) Create the application using the programming window shown on page 3-19. Enter the desired extension number for the application (do not use a number that is assigned to another application).
- (2) When the application programming window shown on page 3-21 appears, enter a description for the application. Also select recording numbers for day and night modes, if custom recordings will be used. (The recordings will be made in step 10. Recording descriptions are programmed as shown on page 3-48.) This application does not use Digit Translation.
- (3) Create mailboxes for the station users (Subscribers) and create a System Administrator. See page 3-35 for mailbox programming instructions and page 3-57 for miscellaneous voice mail information programming instructions. Initialize at least one mailbox for testing purposes.
- (4) If the subscribers wish to use Group Lists for leaving messages, program the lists by following the directions given on page 3-31.
- (5) If Remote Notification will be used for placing outside calls, program the Remote Notification Tables as explained on page 3-50. (Message lamp notification is performed through intercom calls. Remote notification is used only for calls to pagers and personal numbers.)
- (6) Program the IVX500 ports, as described on page 3-25. Set the Port Operation field to "Voice Computer Hunt Group" if the telephone system will be programmed to send voice computer dial rules; set it to "Non-Subscriber Voice Mail" if the telephone system does not have voice computer hunt groups. If desired, change the Number of Rings Before Answer field and enable the Remote Messaging/Lamp Notification option.
- (7) **Systems without Voice Computer Hunt Groups:** If desired, program one or more single-line circuits connected to the IVX500 Non-Sub-

scriber Voice Mail ports as members of hunt group in the telephone system.

Systems with Voice Computer Hunt Groups:

If the telephone system has voice computer hunt group capabilities, the single-line circuits connected to the IVX500 ports can be placed in a voice computer hunt group that uses dial rules. Follow the instructions for your specific telephone system, located in this chapter. (For additional information regarding dial rules, also refer to page 4-4.) When programming the dial rules for the voice computer hunt group, use one of the following formats:

- a. If station users will be forwarding their stations to the Non-Subscriber Voice Mail or if a "chain" of forwards could end at the Non-Subscriber Voice Mail, use this dial rule string

"<XXX>#", 4, "#", 1, "#"

In place of the *XXX*, use the number that is programmed for the Non-Subscriber Voice Mail application *in the IVX500 System* in step 1, not the telephone system extension number of the single-line circuit connected to the ports.

- b. If station users will not be forwarding to the Non-Subscriber Voice Mail, dial rule 4 is not needed. Instead, use this dial rule string.

"<XXX>##", 1, "#"

In place of the *XXX*, use the number that is programmed for the Non-Subscriber Voice Mail application *in the IVX500 System* in step 1, not the telephone system extension number of the single-line circuit connected to the ports.

- (8) If the customer wants calls to ring in directly to the Non-Subscriber Voice Mail application, program the appropriate telephone system trunks to ring in to the single-line circuit extension number(s) or hunt group pilot number associated with the application.
- (9) If remote messaging to outside numbers will be used, ensure that the single-line circuits connected to the IVX500 ports with Remote Message/Lamp Notification enabled have outgoing access permission and the proper toll restrictions for the trunks in the telephone system.

- (10) Using the Voice Mail System Administrator's mailbox, record the greetings for the Non-Subscriber Voice Mail application. Follow the instructions given on page 2-18. When the prompt asks for the recording number, enter the number for the day or night greeting that you selected in step 2.
- (11) Place calls to the Non-Subscriber Voice Mail (use the extension and/or hunt group pilot number) to ensure that the correct greetings are played during day and night modes and that the mailboxes can be accessed.

MSG CTRL

↓ QUICK MSG RETRIEVAL

4. INTER-TEL AND PREMIER 256- AND 416/832-PORT SYSTEMS

4.1 In order for the IVX500 to work properly with the IMX 256, IMX 416/832, GMX 256, GMX 416/832, ESPDX, or ESPMDX Systems, the following installation and programming procedures must be performed.

X A. HARDWARE REQUIREMENTS

4.2 The recommended installation method is to install the AC- or DC-ringing IVX500 on OPX circuits on an IDC card, not on SLC card circuits. Set up the OPX circuits for the proper ringing (AC or DC).

X 4.3 When connecting the IVX500 PC to the telephone system single-line circuits, *do not* include the second pair (+30VDC and ground) from the single-line circuits. The +30VDC from the single-line circuits will damage the IVX500 PC.

B. HUNT GROUP PROGRAMMING

4.4 This section contains the procedures required for programming the single-line circuits connected to IVX500 ports into hunt groups. Depending on the software version of your telephone system, you will use one of the following programming methods:

- **With Voice Computer Hunt Groups:** These hunt groups can utilize dial rules and/or the DTMF feedback (Voice Talk) feature, as described below. (See page 4-4 for more information on dial rules.)
- **With Voice Mail Hunt Groups:** These hunt groups are specially designed for use by voice processing units like the IVX500. See page 4-13.
- **Without Voice Mail Hunt Groups:** Older systems do not have voice mail or voice computer hunt groups, but can be programmed to function like a hunt group with the IVX500. See page 4-14.

With Voice Computer Hunt Groups

4.5 In some systems, single-line circuits used by the IVX500 can be programmed into a *voice computer* hunt group. The group has a pilot number that is dialed to access the ports. With a voice computer interface, the ports on the IVX500 do not have to be assigned to specific applications. They are assigned as "Voice Computer Hunt Group" ports in the IVX500 database and the dial rule string sent by the telephone system determines the IVX500 application that will be used. Therefore, the telephone system can have several voice computer hunt groups that all contain the same IVX500 ports. However, each hunt group would have a different set of dial rules to send to the IVX500.

(1) To use voice computer hunt groups, the following programming must be completed *in the IVX500 database*:

a. *In the Applications Programming window:*

- **Applications Programming:** Create the necessary IVX500 applications using the application setup instructions in this chapter.
- **Port Programming — Port Configuration:** Select the "Voice Computer Hunt Group" application type for the Port Operation each IVX500 port.
- **Enable Remote Messaging/Lamp Notification:** Enable any or all of the IVX500 ports for turning on the message waiting indications at stations in the telephone system.

b. *In the Miscellaneous Information — Telephone System Interface window:*

- **System Type:** Select the appropriate system. Note that there are two options for each of the 256- and 416/832-port systems, depending on whether standard or pure system tones (Inter-Tel tones) are enabled on the telephone system. See page 3-53 in PROGRAMMING.
- **Voice Talk:** If DTMF feedback tones will be enabled on the telephone system, enable Voice Talk on the IVX500 by placing a check in the check box. See page 3-53 in PROGRAMMING.

(2) Create the various voice computer hunt groups in the *telephone system database* following these guidelines:

a. **System Configuration window:** The IDC circuits connected to the IVX500 must be programmed as OPX circuits.

b. **Hunt Group Programming window:**

- Program the IDC circuits connected to the IVX500 ports as hunt group members.
- **For the Non-Subscriber Voice Mail and Quick Message Retrieval applications:** Enable the "Voice Computer Group" checkbox. Then program the dial rule string and recall destination (refer to specific applications setup instructions in this chapter for dial rules).
- **For all other IVX500 application types:** Enabled the "Automated Attendant Hunt

Group” checkbox. Then program the dial rule string and recall destination (refer to specific applications setup instructions in this chapter for dial rules).

- c. *Station Programming/Individual Station Programming — Special Purpose Station Programming window:* When programming each single-line circuit that will be attached to the IVX500, designate the circuit as a voice mail station.
- d. *Station Programming/Individual Station Programming — Miscellaneous Information window:* Assign the Quick Message Retrieval voice computer hunt group pilot number as the alternate message source for all of the IVX500 ports in the hunt group.
- e. *Station Programming/Individual Station Programming — Miscellaneous Station Flags Programming window:*
 - On systems with the “DTMF Feedback Tones” flag, enable the flag for each port so that the KSU can send Voice Talk DTMF commands to the ports.
 - If desired, enable the “Automated Attendant/VM/DISA Do-Not-Disturb Break-through” flag for each circuit connected to an IVX500 port to allow the IVX500 to ring through to stations that are in do-not-disturb mode.
 - If required, enable DC ringing for each circuit connected to an IVX500 port.

With Voice Mail Hunt Groups

4.6 In some systems, a hunt group can be designated as a *voice mail* hunt group to enable the hunt group to contain the multiple ports of the IVX500 unit. Each of the IVX500 ports is programmed in the distribution list like a regular hunt group station. With this feature, incoming calls to the IVX500 can be sent to a single extension number (pilot number) where they can be processed even if one port is busy or out of service.

4.7 Each voice mail hunt group should contain one type of application (for example: an Automated Attendant hunt group, a Non-Subscriber Voice Mail hunt group, etc.).

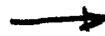
4.8 If the hunt group is a system forwarding point, the mailbox number that is dialed when the IVX500 answers is the original destination station’s extension number. (See the system forwarding description in the *Installation & Field Maintenance Manual* for your tele-

phone system.) For example: The principal station is called, the call is sent to the first forwarding point, and then is sent to a IVX500 application where the principal station’s extension number is dialed.

● The following programming must be completed in the *IVX500 database*:

a. *Applications Programming window:*

- *Applications Programming:* Create the necessary IVX500 applications using the application setup instructions in this chapter.



- *Port Programming — Port Configuration:* Select the appropriate application type (Automated Attendant, Call Routing Announcement, etc.) for the Port Operation of each IVX500 port.



- *Enable Remote Messaging/Lamp Notification:* Enable any or all of the IVX500 ports for turning on the message waiting indications at stations in the telephone system.

b. *Miscellaneous Information — Telephone System Interface window — System Type:* Select the appropriate system type. Note that there are two options for each of the 256- and 416/832-port systems, depending on whether standard or pure system tones (Inter-Tel tones) are enabled on the telephone system. See page 3-53 in PROGRAMMING.

● The following programming must be completed in the *telephone system database*:

a. *System Configuration:* The IDC circuits connected to the IVX500 must be programmed as OPX circuits.

b. *Station Programming/Individual Station Programming — Special Purpose Station Programming window:* When programming each single-line circuit that will be attached to the IVX500, designate the circuit as a voice mail station.

c. *Station Programming/Individual Station Programming — Miscellaneous Station Flags Programming window:* If required, enable DC ringing.

d. *Hunt Group Programming window:*

- Program the circuits connected to the IVX500 ports as hunt group members.
- Enable the Voice Mail Hunt Group checkbox.

NOTE)



- e. *Station Programming/Individual Station Programming — Miscellaneous Information window:* Assign the extension number or pilot number associated with the Quick Message Retrieval as the alternate message source for each of the IVX500 ports in the hunt group.

Without Voice Mail/Computer Hunt Groups

4.9 The circuits connected to the IVX500 ports should be programmed into a hunt group-type arrangement, as described below, instead of being placed in a regular hunt group.

NOTE: Each hunt group should contain ports that are assigned to one type of application in the IVX500 database. (For example: a hunt group of Automated Attendant ports, a hunt group of Non-Subscriber Voice Mail ports, etc.).

- (1) Create a hunt group arrangement like the one described in the programming example below. In the example, the station circuits for extension numbers 112, 113, 114, and 115 are connected to four ports of an IVX500. The hunt group arrangement is programmed as follows:
 - a. *Station Programming/Individual Station Information — Miscellaneous Information window:*
 - Extension number 112 — Designate extension number 113 as the secretarial intercept.
 - Extension number 113 — Designate extension number 114 as the secretarial intercept.
 - Extension number 114 — Designate extension number 115 as the secretarial intercept.
 - Extension number 115 — Do not designate a secretarial intercept.
- (2) The following programming steps must also be completed in the telephone system database:
 - a. *System Configuration window:* The IDC circuits connected to the IVX500 must be programmed as OPX circuits.
 - b. *Station Programming/Individual Station Programming — Special Purpose Station Programming window:* When programming each single-line circuit that will be attached to the IVX500, designate the circuit as a voice mail station.

- c. *Station Programming/Individual Station Programming — Miscellaneous Information window:* Assign the extension number of the Quick Message Retrieval port as the alternate message source for each of the IVX500 ports in the hunt group.

- d. *Station Programming/Individual Station Programming — Miscellaneous Station Flags Programming window:* If required, enable DC ringing.

- (3) Complete the following programming using a station instrument connected to the single-line port that will be connected to the IVX500 circuit:

- a. Temporarily connect a single-line set to the station circuit assigned to the extension number of the last station in the hunt group (115 in the example). **NOTE:** If using a DC-ringing single-line set, it will ring continuously whenever on hook. This is normal and will not affect off-hook programming procedures.

- b. Lift the handset, dial the forward no answer feature code (default = 356), and then dial the extension number of the first station in the hunt group (112 in the example).

- c. Remove the phone and reconnect the IVX500 port to the station circuit.

- (4) To use the hunt group arrangement, the following programming must be completed in the IVX500 database:

- a. *Applications Programming window:*

- *Applications Programming:* Create the necessary IVX500 applications using the application setup instructions in this chapter.

- *Port Programming — Port Configuration:* Select the appropriate application type (Automated Attendant, Call Routing Announcement, etc.) for the Port Operation of each IVX500 port.

- *Enable Remote Messaging/Lamp Notification:* Enable any or all of the IVX500 ports for turning on the message waiting indications at stations in the telephone system.

- b. *Miscellaneous Information — Telephone System Interface window — System Type:* Select the appropriate system. Note that there are two options for each of the 256- and 416/832-port systems, depending on whether

standard or pure system tones (Inter-Tel tones) are enabled on the telephone system. See page 3-53 in PROGRAMMING.

C. MESSAGE WAITING NOTIFICATION

4.10 To ensure that keyset users receive the proper LED and LCD message waiting indications when they receive new voice mail messages, perform the following programming in the telephone system database:

Station Programming — Individual Station Information window: Assign each of the IVX500 ports with a user name of "V-MAIL" or some other similar identifying name.

4.11 To ensure that the subscribers have easy access to their voice mail messages when responding to message waiting notifications, program the following:

Station Programming/Individual Station Information — Miscellaneous Information window: Assign the extension or pilot number associated with the Quick Message Retrieval application as the alternate message source for all of the IVX500 ports in the hunt group.

4.12 The following programming must be completed in the IVX500 database to allow the IVX500 to leave message waiting notifications at the stations:

Applications Programming/Port Programming — Port Configuration window — Enable Remote Messaging/Lamp Notification: Enable any or all of the IVX500 ports for turning on the message waiting indications at stations in the telephone system.

D. MESSAGE CENTER

4.13 The extension or pilot number associated with IVX500 Non-Subscriber Voice Mail application can be programmed to act as the message center for stations. Then, when an intercom caller calls a station that is busy or unavailable, he or she can choose to leave a message at the called station's message center (the Non-Subscriber Voice Mail application). The IVX500 is automatically called and the caller is connected directly to the called station's assigned mailbox and hears the called station's personal greeting.

4.14 The message center designation also allows keyset users to quickly and easily forward calls to their voice mailboxes. To do this, a keyset user presses the FWD key and then the MSG key. Calls forwarded through the keyset are then sent to the keyset user's voice mailbox. To use these features, perform the following database programming:

Station Programming/Individual Station Information — Miscellaneous Information window: Program the desired stations to have the Non-Subscriber Voice Mail application (pilot number or extension number) as the message center.

Hunt Group Programming window:

- Program the circuits connected to IVX500 ports as hunt group members.
- Enable the Voice Mail Hunt Group checkbox.

E. CAMP-ON TONES

4.15 When callers hear busy signals when calling the IVX500, they can simply wait off hook (camp on) until the called port is available. To prevent the camp-on tones from being sent to the IVX500, perform the following database programming:

Station Programming/Individual Station Information — Miscellaneous Flags window: Disable camp-on tones for all circuits connected to IVX500 ports.

4.16 When the IVX500 places a call to a busy station, it must be able to recognize the busy signal. If you are not using Voice Talk, the camp-on timer must be adjusted to allow the IVX500 to recognize busy signal when placing a call.

System-Wide Features — Timers window: Change the Camp-On timer to 10 seconds (default is 3 seconds).

F. VALIDATED MAILBOX NUMBERS

4.17 This feature affects calls transferred to voice mail or placed through an automated attendant on the IVX500. If *all* mailbox numbers and extension IDs match extension numbers (are "associated"), the Validate Voice Mailbox Numbers option should be enabled to allow the system to check that the number entered by the caller is valid. If there are mailbox numbers that do not match an extension number (non-associated), there is no need to validate and this option should be disabled.

4.18 If the telephone system is programmed to validate voice mailbox numbers, and the caller dials a number that does not have an associated mailbox on the IVX500, the number will be considered invalid even if a *non-associated* mailbox with that number exists.

Miscellaneous System-Wide Information window: If mailboxes and extension IDs on the IVX500 are marked as "associated" and match the extension numbers in the telephone system, enable the Validate Voice Mailboxes flag.

G. CALL FORWARDING

4.19 Station users can select the call forwarding feature to send calls to the Non-Subscriber Voice Mail application. When the forwarded call is received by the IVX500, the proper mailbox number is automatically dialed. The caller hears the mailbox subscriber's personal greeting.

4.20 When a call is forwarded to a Non-Subscriber Voice Mail hunt group, it may have to try more than one port before reaching one that is available. If the "number of day/night rings" field in the IVX500 database is changed to more than one ring, the IVX500 will need enough time to search for an available port and allow the number of day/night rings at the selected port before the Forward No Answer timer expires and the KSU retrieves that call. Ensure that the following telephone system timer is set long enough to allow sufficient time for the IVX500 to answer the call:

System-Wide Features — Timers window: Ensure that the Forward No Answer timer is programmed to be longer than the time it takes the call to ring at multiple ports in the Non-Subscriber Voice Mail hunt group (while searching for an available port).

4.21 In some telephone system software packages, users cannot forward calls to a hunt group (except using system forwarding paths). However, calls can be forwarded to the individual IVX500 ports which are programmed to circulate calls through the other ports in the hunt group when called. To do this:

- Program the appropriate IVX500 ports as hunt group members and designate the hunt group as a voice mail hunt group as described on page 4-12.
- Create a system forwarding path that contains only that hunt group.
- For each port, enable system forwarding (when the port is busy or does not answer) to the forwarding path that contains this hunt group.

4.22 Users can then forward or transfer calls to one of the individual IVX500 ports and, if the port is unavailable, calls will circulate through the hunt group.

H. OUTSIDE CALLS

4.23 If the IVX500 is programmed to place outside calls and the telephone system is programmed to use LCR, the Transparent LCR feature must be enabled for the circuits connected to the IVX500. This allows the IVX500 to recognize the outside dial tone necessary for placing a call.

Station Programming/Individual Station Information — Miscellaneous Flags window: Enable the Transparent LCR flag for each of the circuits connected to IVX500 ports.

Station Programming/Individual Station Information — Outgoing Access window: Make sure the circuits connected to the IVX500 ports that will be placing outgoing calls have outgoing access for the appropriate trunk groups.

Station Programming/Individual Station Information — Toll Restriction window: Make sure the circuits connected to IVX500 ports that will be placing outgoing calls have the proper toll restrictions.

4.24 The following information must be correctly programmed in the IVX500 database:

Miscellaneous Information window — Remote Notification Tables: When programming the Remote Notification Tables, do not use the LCR feature code for the Outgoing Access string unless the telephone system database has the IVX500 ports flagged for Transparent LCR.

Applications Programming/Port Programming — Port Configuration window — Enable Remote Messaging/Lamp Notification: Enable any or all of the IVX500 ports for Remote Messaging/Lamp Notification. This allows them to turn on the message waiting indications at stations in the telephone system and to place outgoing calls.

4.25 If the customer wants calls to ring in directly to an application, program the appropriate telephone system trunks to ring in to the single-line circuit extension number(s) or hunt group pilot number associated with the application.

Trunk Groups, DID Groups, and Ring-In/Answer Patterns — Ring-In/Answer Patterns window: Make sure the circuits connected to IVX500 ports that will be receiving outside calls are programmed for ring in for the appropriate trunk groups.

I. SETTING THE DATE AND TIME

4.26 To ensure that the correct time is used by the IVX500, the following information is programmed in the IVX500 database System Maintenance window shown on page 3-63 in PROGRAMMING.

System Maintenance window: Enter current date and time or set it to match the programming PC.

5. INTER-TEL IMX 1224/2460 AND PREMIER ESP SYSTEMS

5.1 In order for the IVX500 to work properly with the Premier ESP and Inter-Tel IMX 1224/2460 Systems, the following installation and programming procedures must be performed.

A. HARDWARE REQUIREMENTS

5.2 When connecting the IVX500 to IMX 1224/2460 or ESP single-line circuits, *do not* include the second pair (+30VDC and ground) from the single-line circuits. The +30VDC from the single-line circuits will damage the IVX500.

5.3 The single-line circuits can be configured for AC or DC ringing depending on the IVX500 PC configuration. Refer to the telephone system manual for complete installation instructions and requirements.

B. HUNT GROUP PROGRAMMING

5.4 This section contains the procedures required for programming the single-line circuits connected to IVX500 ports into hunt groups. Depending on the software version of your telephone system, you will use one of the following programming methods:

- **With Voice Computer Hunt Groups:** These hunt groups can utilize dial rules and/or the Voice Talk DTMF feedback feature, as described below. (See page 4-4 for more information on dial rules.)
- **Without Voice Computer Hunt Groups:** Older systems do not have voice computer hunt groups, but can be programmed to function like a hunt group with the IVX500. See page 4-18.

With Voice Computer Hunt Groups

5.5 In some software packages, single-line circuits used by the IVX500 can be programmed into a *voice computer* hunt group. The group has a pilot number that is dialed to access the ports. With a voice computer interface, the ports on the IVX500 do not have to be assigned to specific applications. They are assigned as "Voice Computer Hunt Group" ports in the IVX500 database and the dial rule string sent by the telephone system determines the IVX500 application that will be used. Therefore, the telephone system can have several voice computer hunt groups that all contain the same IVX500 ports. However, each hunt group would have a different set of dial rules to send to the IVX500.

- (1) To use the hunt groups, the following programming must be completed in the IVX500 database:

a. *Applications Programming window:*

- **Applications Programming:** Create the necessary IVX500 applications using the application setup instructions in this chapter.
- **Port Programming — Port Configuration:** Select the "Voice Computer Hunt Group" application type for the Port Operation of each IVX500 port.
- **Enable Remote Messaging/Lamp Notification:** Enable any or all of the IVX500 ports for Remote Messaging/Lamp Notification. This allows them to turn on the message waiting indications at stations in the telephone system and place outgoing calls.

b. *Miscellaneous Information — Telephone System Interface window:*

- **System Type:** Select Inter-Tel IMX 1224/2460 or Premier ESP, depending on your system type. See page 3-53 in PROGRAMMING.
- **Voice Talk:** If DTMF feedback tones will be enabled on the telephone system, enable Voice Talk on the IVX500 by placing a check in the check box. See page 3-53 in PROGRAMMING.

- (2) Create the various voice computer hunt groups in the telephone system database following these guidelines:

a. *Station Data — Specific Station Information (DAA):*

- When programming each single-line circuit that will be attached to the IVX500, designate the circuit as a voice mail/computer station.
- If Voice Talk will be used, enable the DTMF feedback tones flag for each port so that the KSU can send Voice Talk DTMF commands to the ports.
- Assign the Quick Message Retrieval application pilot number as the alternate message source for all of the IVX500 ports in the hunt group.

b. *Hunt Groups (E)*:

- Program the circuits connected to the IVX500 ports as hunt group members.
- For the Non-Subscriber Voice Mail and Quick Message Retrieval applications: Answer "Yes" to the prompt that asks, "Is This A Voice Mail Voice Computer Hunt Group?" (For further details, refer to the telephone system manual.)
- For any other IVX500 application type: Answer "No" to the prompt that asks, "Is This A Voice Mail Voice Computer Hunt Group?" and then answer "Yes" to the prompt that asks "Is This An Automated Attendant Voice Computer Group?" (For further details, refer to the telephone system manual.)
- Program the dial rule string and recall destination for the hunt group (refer to specific applications setup instructions in this chapter for dial rules). For complete details, refer to the telephone system manual.

Without Voice Computer Hunt Groups

5.6 If using a software package that does not have voice computer hunt groups, the circuit numbers connected to the IVX500 ports should be programmed into a hunt group-type arrangement, as described below, instead of being placed in a regular hunt group.

NOTE: Each hunt group should contain ports that are assigned to one type of application in the IVX500 database. (For example: a hunt group of Automated Attendant ports, a hunt group of Non-Subscriber Voice Mail ports, etc.).

- (1) Create a hunt group arrangement like the one described in the programming example below. In the example, the station circuits for extension numbers 112, 113, 114, and 115 are connected to four ports of an IVX500. The hunt group arrangement is programmed as follows:

Station Data — Specific Station Information (DAA)

- Intercom number 112 — Designate intercom number 113 as the secretarial intercept.
- Intercom number 113 — Designate intercom number 114 as the secretarial intercept.
- Intercom number 114 — Designate intercom number 115 as the secretarial intercept.

- Intercom number 115 — Do not designate a secretarial intercept.
- Designate the attendant as NONE for all IVX500 extensions so that the cancel forward feature cannot be used.

- (2) The following programming steps must also be completed on the telephone system:

Station Data — Specific Station Information (DAA):

- When programming each single-line circuit that will be attached to the IVX500, designate the circuit as a voice mail station.
- Assign the circuit connected to the Quick Message Retrieval application as the alternate message source for all of the IVX500 ports in the hunt group.

- (3) Complete the following programming using a station instrument connected to the single-line port that will be connected to the IVX500 circuit:

- a. Temporarily connect a single-line set to the station circuit assigned the last station in the hunt group (115 in the example). NOTE: If using a DC-ringing single-line set, it will ring continuously whenever on hook. This is normal and will not affect off-hook programming procedures.

- b. Lift the handset, dial the forward no answer feature code (default = 356), and then dial the extension number of the first station in the hunt group (112 in the example).

- c. Remove the phone and reconnect the IVX500 to the station circuit.

- (4) To use the hunt group arrangement, the following programming must be completed in the IVX500 database:

a. *Applications Programming window*:

- *Applications Programming*: Create the necessary IVX500 applications using the application setup instructions in this chapter.
- *Port Programming — Port Configuration*: Select the appropriate application type (Automated Attendant, Call Routing Announcement, etc.) for the Port Operation of each IVX500 port.
- *Enable Remote Messaging/Lamp Notification*: Enable any or all of the IVX500 ports for Remote Messaging/Lamp Noti-

fication. This allows them to turn on the message waiting indications at stations in the telephone system and to place outgoing calls.

- b. *Miscellaneous Information — Telephone System Interface window — System Type:* Select Inter-Tel IMX 1224/2460 or Premier ESP, depending on your system type. See page 3-53 in PROGRAMMING.

C. MESSAGE WAITING NOTIFICATION

5.7 To ensure that station users receive the proper LED and LCD message waiting indications when they receive voice mail messages, perform the following telephone system database programming:

Station Data — Specific Station Information (DAA): Program each of the IVX500 ports with intercom numbers that have a user name of "V-MAIL" or some other similar identifying name.

- Program each IVX500 port as a voice mail station.

5.8 To ensure that the subscribers have easy access to their voice mail messages when responding to message waiting notifications, program the following:

Station Data — Specific Station Information (DAA): Assign the circuit connected to the Quick Message Retrieval application as the alternate message source for all of the IVX500 ports in the hunt group.

5.9 The following programming must be completed in the IVX500 database to allow the IVX500 to leave message waiting notifications at the stations:

Applications Programming/Port Programming —Port Configuration window—Enable Remote Messaging/Lamp Notification: Enable any or all of the IVX500 ports for Remote Messaging/Lamp Notification. This allows them to turn on the message waiting indications at stations in the telephone system and to place outgoing calls.

D. MESSAGE CENTER

5.10 The IVX500 Non-Subscriber Voice mail application can be programmed to act as the message center for stations. Then, when an intercom caller calls a station that is busy or unavailable, he or she can choose to leave a message at the called station's message center (the Non-Subscriber Voice Mail application). The IVX500 is automatically called and the caller is connected directly

to the station user's assigned mailbox. The caller hears the station user's personal greeting.

5.11 To use the message center feature, perform the following telephone system database programming:

Database Programming (DAA): Program the desired stations to have the Non-Subscriber Voice Mail extension number or pilot number as the message center.

Hunt Groups (E)

- Program the circuits connected to the IVX500 ports as hunt group members.
- Answer "Yes" to the prompt that asks, "Is This A Voice Mail Voice Computer Hunt Group?"

E. CAMP-ON TONES

5.12 When callers hear busy signals when calling the IVX500, they can simply wait off hook (camp on) until the called port is available. To prevent the camp-on tones from being sent to the IVX500, perform the following database programming in the telephone system:

Station Data — Specific Station Information (DAA): Program all the IVX500 single-line circuits to disallow camp-on tones.

5.13 If Voice Talk is not enabled, the Camp-On timer must be adjusted to allow the IVX500 to recognize busy signals when placing a call.

Timer Values (AB): Change the Camp-On timer to 10 seconds (default is 3 seconds).

F. VALIDATED MAILBOX NUMBERS

5.14 This feature affects calls transferred to voice mail or placed through an automated attendant on the IVX500. If *all* mailbox numbers and extension IDs match extension numbers (are "associated"), the Validate Voice Mailbox Numbers option should be enabled to allow the system to check that the number entered by the caller is valid. If there are mailbox numbers that do not match an extension number (non-associated), there is no need to validate and this option should be disabled.

5.15 If the telephone system is programmed to validate voice mailbox numbers, and the caller dials a number that does not have an associated mailbox on the IVX500, the number will be considered invalid even if a *non-associated* mailbox with that number exists.

Miscellaneous System Data (AF): If all mailboxes and extension IDs on the IVX500 are marked as "associated" and match the extension numbers in the telephone system, enable the Voice Mail Validation flag.

G. CALL FORWARDING

5.16 Station users can select the call forwarding feature to send calls to the Non-Subscriber Voice Mail application. When the forwarded call is received by the IVX500, the proper mailbox number is automatically dialed.

5.17 When a call is forwarded to the Non-Subscriber Voice Mail hunt group, it may have to try more than one port before reaching one that is available. If the "number of day/night rings" field in the IVX500 database is changed to more than one ring, the IVX500 will need enough time to search for an available port and allow the number of day/night rings at the selected port before the Forward No Answer timer expires and the KSU retrieves that call. Ensure that the following timer is set long enough to allow the IVX500 time to answer the call:

Timer Values (AB): Ensure that the Forward No Answer timer is programmed to be longer than the time it takes the call to ring at multiple ports in the Non-Subscriber Voice Mail hunt group (while searching for an available port).

H. OUTSIDE CALLS

5.18 If the IVX500 is programmed to place outside calls, the circuits connected to the IVX500 cannot be programmed to use Least-Cost Routing (LCR). The IVX500 must be able to recognize outside dial tone when placing a call.

5.19 Program the following in the telephone system database:

Station Data — Specific Station Information (DAA): Ensure that the IVX500 circuits have the proper outgoing access and toll restrictions for placing calls. *Do not* enable LCR-Only toll restriction for the ports that will be used by the IVX500 for placing outside calls.

5.20 Program the following in the IVX500 database:

Miscellaneous Information — Remote Notification Tables: When programming the Remote Notification Tables, use a trunk access code other than the LCR feature code.

5.21 If the customer wants calls to ring in directly to an application, program the appropriate telephone system trunks to ring in to the single-line circuit extension number(s) or hunt group pilot number associated with the application.

Station Data — Specific Station Information (DAA): Make sure the circuits connected to IVX500 ports that will be receiving outside calls are programmed for ring-in assignment for the appropriate trunk groups.

I. SETTING THE DATE AND TIME

5.22 To ensure that the correct time is used by the IVX500, the following information is programmed in the IVX500 database System Maintenance window shown on page 3-63 in PROGRAMMING.

System Maintenance: Enter current date and time or set it to match the programming PC.

6. INTER-TEL GMX-48 AND IMX 2448 SYSTEMS

6.1 In order for the IVX500 to work properly with the Inter-Tel GMX-48 and IMX 2448 Systems, the following installation and programming procedures must be performed.

A. HARDWARE REQUIREMENTS

6.2 The IVX500 is connected to circuits on the Accessory Port Module (APM) strapped for AC or DC ringing depending on the type of IVX500 Voice Processing Card used.

B. HUNT GROUP PROGRAMMING

6.3 This section contains the procedures required for programming the single-line circuits connected to IVX500 ports into hunt groups. Depending on the software version of your telephone system, you will use one of the following programming methods:

- **With Voice Computer Hunt Groups:** These hunt groups can utilize dial rules and/or the Voice Talk DTMF feedback feature, as described below. (See page 4-4 for more information on dial rules.)
- **Without Voice Computer Hunt Groups:** Older systems do not have voice mail or voice computer hunt groups, but can be programmed to function like a hunt group with the IVX500. See page 4-22.

With Voice Computer Hunt Groups

6.4 In some GMX-48 software packages, single-line circuits used by the IVX500 can be programmed into a *voice computer* hunt group. The group has a pilot number that is dialed to access the IVX500 ports. With a voice computer interface, the ports on the IVX500 do not have to be assigned to specific applications. They are assigned as "Voice Computer Hunt Group" ports in the IVX500 database and the dial rule string sent by the telephone system determines the IVX500 application that will be used. Therefore, the telephone system can have several voice computer hunt groups that all contain the same IVX500 ports. However, each hunt group would have a different set of dial rules to send to the IVX500.

- (1) To use the hunt groups, the following programming must be completed in the IVX500 database:

- a. *Applications Programming window:*

- *Applications Programming:* Create the necessary IVX500 applications using the

application setup instructions in this chapter.

- *Port Programming — Port Configuration:* Select the "Voice Computer Hunt Group" application type for the Port Operation of each IVX500 port.
- *Enable Remote Messaging/Lamp Notification:* Enable any or all of the IVX500 ports for Remote Messaging/Lamp Notification. This allows them to turn on the message waiting indications at stations in the telephone system and place outgoing calls.

- b. *Miscellaneous Information — Telephone System Interface window:*

- *System Type:* Select GMX-48 or IMX 2448, depending on your system type. See page 3-53 in PROGRAMMING.
- *Voice Talk:* If DTMF feedback tones will be enabled on the telephone system, enable Voice Talk on the IVX500 by placing a check in the check box. See page 3-53 in PROGRAMMING.

- (2) Create the various voice computer hunt groups in the telephone system database following these guidelines:

- a. *Station Data — Specific Station Information (DAA):*

- When programming each single-line circuit that will be attached to the IVX500, designate the circuit as a voice mail/computer station.
- If Voice Talk will be used, enable the DTMF feedback tones flag for each port so that the KSU can send Voice Talk DTMF commands to the ports.
- Assign the Quick Message Retrieval application as the alternate message source for all of the IVX500 ports in the hunt group.

- b. *Hunt Groups (E):*

- Program the circuits connected to the IVX500 ports as hunt group members.
- **For the Non-Subscriber Voice Mail and Quick Message Retrieval applications:** Answer "Yes" to the prompt that asks, "Is This A Voice Mail Voice Computer Hunt Group?" For further informa-

tion refer to the telephone system manual.

- For any other IVX500 application type: Answer "No" to the prompt that asks, "Is This A Voice Mail Voice Computer Hunt Group?" and then answer "Yes" to the prompt that asks "Is This An Automated Attendant Voice Computer Group?" For further information refer to the telephone system manual.
- Program the dial rules and recall destination for the hunt group (refer to specific applications setup instructions in this chapter for dial rules). For complete details, refer to the telephone system manual.

Without Voice Computer Hunt Groups

6.5 In software packages without voice computer hunt groups, the intercom numbers assigned to the IVX500 ports should be programmed into a hunt group-type arrangement, as described below, instead of being placed in a regular hunt group.

NOTE: Each hunt group should contain ports that are assigned to one type of application in the IVX500 database. (For example: a hunt group of Automated Attendant ports, a hunt group of Non-Subscriber Voice Mail ports, etc.).

- (1) Create a hunt group arrangement like the one described in the programming example below. In the example, the station circuits for extension numbers 112, 113, 114, and 115 are connected to four ports of an IVX500. The hunt group arrangement is programmed as follows:
 - a. *Station Data — Specific Station Information (DAA)*
 - Intercom number 112 — Designate intercom number 113 as the secretarial intercept.
 - Intercom number 113 — Designate intercom number 114 as the secretarial intercept.
 - Intercom number 114 — Designate intercom number 115 as the secretarial intercept.
 - Intercom number 115 — Do not designate a secretarial intercept.

- Designate the attendant as NONE for all IVX500 ports in the hunt group so that the cancel forward feature cannot be used.

- (2) The following programming steps must also be completed on the telephone system:

- a. *Station Data — Specific Station Information (DAA):*

- When programming each single-line circuit that will be attached to the IVX500, designate the circuit as a voice mail station.
- Assign circuit connected to the Quick Message Retrieval application as the alternate message source for all of the IVX500 ports in the hunt group.

- (3) Complete the following programming using a station instrument connected to the single-line port that will be connected to the IVX500 circuit:

- a. Temporarily connect a single-line set to the station circuit assigned the last station in the hunt group (115 in the example). **NOTE:** If using a DC-ringing single-line set, it will ring continuously whenever on hook. This is normal and will not affect off-hook programming procedures.
- b. Lift the handset, dial the forward no answer feature code (default = 356), and then dial the extension number of the first station in the hunt group (112 in the example).
- c. Remove the phone and reconnect the IVX500 to the station circuit.

- (4) To use the hunt group arrangement, the following programming must be completed in the IVX500 database:

- a. *Applications Programming window:*

- *Applications Programming:* Create the necessary IVX500 applications using the application setup instructions in this chapter.
- *Port Programming — Port Configuration:* Select the appropriate application type (Automated Attendant, Call Routing Announcement, etc.) for each IVX500 port.
- *Enable Remote Messaging/Lamp Notification:* Enable any or all of the IVX500 ports for Remote Messaging/Lamp Notification. This allows them to turn on the

message waiting indications at stations in the telephone system and to place outgoing calls.

- b. *Miscellaneous Information — Telephone System Interface window — System Type:* Select GMX-48 or IMX 2448, depending on your system type. See page 3-53 in PROGRAMMING.

C. MESSAGE WAITING NOTIFICATION

6.6 To ensure that station users receive the proper LED and LCD message waiting indications when they receive voice mail messages, perform the following telephone system programming:

Station Data — Specific Station Information (DAA)

- Assign each of the IVX500 port intercom numbers with a user name of "V-MAIL" or some other similar identifying name.
- Assign each IVX500 port as a voice mail station.

6.7 To ensure that the subscribers have easy access to their voice mail messages when responding to message waiting notifications, program the following:

Station Data — Specific Station Information (DAA): Assign the circuit connected to the Quick Message Retrieval application as the alternate message source for all of the IVX500 ports in the hunt group.

6.8 The following programming must be completed in the IVX500 database to allow the IVX500 to leave message waiting notifications at the stations:

Applications Programming/Port Programming — Port Configuration window — Enable Remote Messaging/Lamp Notification: Enable any or all of the IVX500 ports for Remote Messaging/Lamp Notification. This allows them to turn on the message waiting indications at stations in the telephone system and to place outgoing calls.

D. MESSAGE CENTER

6.9 The IVX500 Non-Subscriber Voice mail application can be programmed to act as the message center for

stations. Then, when an intercom caller calls a station that is busy or unavailable, he or she can choose to leave a message at the called station's message center (the Non-Subscriber Voice Mail application). The IVX500 is automatically called and the caller is connected directly to the station user's assigned mailbox. The caller hears the station user's personal greeting.

6.10 The message center designation also allows key-set users to quickly and easily forward calls to their voice mailboxes. To do this, a station user presses the FWD key and then the MSG key. Calls forwarded through the keyset are then sent to the station user's voice mailbox. (All station users can forward calls directly to the voice mail pilot number using one of the call forwarding feature codes. However, single-line sets do not have MSG keys that can be used for forwarding to the message center.)

6.11 To use the message center features, perform the following GMX-48/IMX 2448 database programming:

Station Data — Specific Station Information (DAA): Program the desired stations to have the extension or pilot number of the Non-Subscriber Voice Mail application as the message center.

Hunt Groups (E)

- Program the circuits connected to the IVX500 ports as hunt group members.
- Answer "Yes" to the prompt that asks, "Is This A Voice Mail Voice Computer Hunt Group?"

E. CAMP-ON TONES

6.12 When callers hear busy signals when calling the IVX500, they can simply wait off hook (camp on) until the called port is available. To prevent the camp-on tones from being sent to the IVX500, perform the following database programming in the telephone system:

Station Data — Specific Station Information (DAA): Program all the IVX500 circuits to disallow camp-on tones.

6.13 If Voice Talk is not enabled, the Camp-On timer must be adjusted to allow the IVX500 to recognize busy signals when placing a call.

Timer Values (AB): Change the Camp-On timer to 10 seconds (default is 3 seconds).

F. VALIDATED MAILBOX NUMBERS

6.14 This feature affects calls transferred to voice mail or placed through an automated attendant on the IVX500. If *all* mailbox numbers and extension IDs match extension numbers (are "associated"), the Validate Voice Mailbox Numbers option should be enabled to allow the system to check that the number entered by the caller is valid. If there are mailbox numbers that do not match an extension number (non-associated), there is no need to validate and this option should be disabled.

6.15 If the telephone system is programmed to validate voice mailbox numbers, and the caller dials a number that does not have an associated mailbox on the IVX500, the number will be considered invalid even if a *non-associated* mailbox with that number exists.

Miscellaneous System Data (AF): If all mailboxes and extension IDs on the IVX500 are marked as "associated" and match the extension numbers in the telephone system, enable the Voice Mailbox Number Validation flag.

G. CALL FORWARDING

6.16 Users can have calls sent to their voice mailboxes by using the call forwarding feature to send calls to the hunt group pilot number. The proper mailbox number is automatically dialed when the IVX500 answers the forwarded call.

6.17 When a call is forwarded to the hunt group, it may have to try more than one port before reaching one that is available. If the "number of day/night rings" is changed to more than one ring in the IVX500 database, the IVX500 will need enough time to search for an available port and allow the number of day/night rings at the selected port before the Forward No Answer timer expires and the KSU retrieves that call. Ensure that the following timer is set long enough to allow the IVX500 time to answer the call:

Timer Values (AB): Ensure that the Forward No Answer timer is programmed to be longer than the time it takes the call to ring at multiple ports

in the Non-Subscriber Voice Mail hunt group (while searching for an available port).

H. OUTSIDE CALLS

6.18 If the IVX500 is programmed to place outside calls, the IVX500 circuits cannot be programmed to use Automatic Route Selection (ARS). The IVX500 must be able to recognize outside dial tone when placing a call.

Station Data — Specific Station Information (DAA): Ensure that the IVX500 circuits have the proper outgoing access and toll restrictions for placing calls. *Do not* enable ARS-Only toll restriction for the ports that will be used by the IVX500 for placing outside calls.

6.19 Program the following in the IVX500 database:

Miscellaneous Information — Remote Notification Tables: When programming the Remote Notification Tables, use a trunk access code other than the ARS feature code.

6.20 If the customer wants calls to ring in directly to an application, program the appropriate telephone system trunks to ring in to the single-line circuit extension number(s) or hunt group pilot number associated with the application.

Station Data — Specific Station Information (DAA): Make sure the circuits connected to IVX500 ports that will be receiving outside calls are programmed for ring-in assignment for the appropriate trunk groups.

I. SETTING THE DATE AND TIME

6.21 To ensure that the correct time is used by the IVX500, the following information is programmed in the IVX500 database System Maintenance window shown on page 3-63 in PROGRAMMING.

System Maintenance: Enter current date and time or set it to match the programming PC.

7. INTER-TEL GMX-152D SYSTEM

7.1 In order for the IVX500 to work properly with the Inter-Tel GMX-152D System, the following installation and programming procedures must be performed.

A. HARDWARE REQUIREMENTS

7.2 When connecting the IVX500 to the GMX-152D single-line circuits, a Station-B2 board must be used. This allows the IVX500 to be directly connected to the single-line ports without using COU circuits (giving keypad users the capability of DTMF dialing on an intercom path to the single-line ports). The IVX500 supports DC ringing. Therefore, no additional equipment is needed for the interface.

7.3 The IVX500 can be used with the special OPX software package.

B. HUNT GROUP PROGRAMMING

7.4 The intercom numbers assigned to the IVX500 ports should be programmed into a hunt group-type arrangement, as described below, instead of being placed in a regular hunt group. This allows the IVX500 to be accessed by dialing the first intercom number in the arrangement as if it were a pilot number.

NOTE: Each hunt group should contain ports that are assigned to one type of application in the IVX500 database. (For example: a hunt group of Automated Attendant ports, a hunt group of Non-Subscriber Voice Mail ports, etc.).

- (1) Create a hunt group arrangement like the one described in the programming example below. In the example, the station circuits for extension numbers 112, 113, 114, and 115 are connected to four ports of an IVX500. The hunt group arrangement is programmed as follows:

- a. *Station Data — Specific Station Information (DAA)*

- Intercom number 112 — Designate intercom number 113 as the secretarial intercept.
- Intercom number 113 — Designate intercom number 114 as the secretarial intercept.
- Intercom number 114 — Designate intercom number 115 as the secretarial intercept.
- Intercom number 115 — Do not designate a secretarial intercept.

- Designate the attendant as NONE for all IVX500 ports in the hunt group so that the cancel forward feature cannot be used.

- (2) The following programming steps must also be completed on the telephone system:

- a. *Station Data — Specific Station Information (DAA):*

- When programming each single-line circuit that will be attached to the IVX500, designate the circuit as a voice mail station.
- Assign the circuit connected to the Quick Message Retrieval application as the alternate message source for all of the IVX500 ports in the hunt group.

- (3) Complete the following programming using a station instrument connected to the single-line port that will be connected to the IVX500 circuit:

- a. Temporarily connect a single-line set to the station circuit assigned the last station in the hunt group (115 in the example). **NOTE:** If using a DC-ringing single-line set, it will ring continuously whenever on hook. This is normal and will not affect off-hook programming procedures.

- b. Lift the handset, dial the forward no answer feature code (default = 356), and then dial the extension number of the first station in the hunt group (112 in the example).

- c. Remove the phone and reconnect the IVX500 to the station circuit.

- (4) To use the hunt group arrangement, the following programming must be completed in the IVX500 database:

- a. *Applications Programming window:*

- *Applications Programming:* Create the necessary IVX500 applications using the application setup instructions in this chapter.
- *Port Programming — Port Configuration:* Select the appropriate application type (Automated Attendant, Call Routing Announcement, etc.) for each IVX500 port.
- *Enable Remote Messaging/Lamp Notification:* Enable any or all of the IVX500 ports for Remote Messaging/Lamp Notification. This allows them to turn on the

message waiting indications at stations in the telephone system and to place outgoing calls.

b. *Miscellaneous Information — Telephone System Interface window:*

- *System Type:* Select GMX-152D. See page 3-53 in PROGRAMMING.
- *Voice Talk:* The GMX-152D *does not* support the Voice Talk feature.

C. MESSAGE WAITING NOTIFICATION

7.5 To ensure that station users receive the proper LED and LCD message waiting indications when they receive voice mail messages, perform the following telephone system programming:

Station Data — Specific Station Information (DAA):

- Assign each of the IVX500 port intercom numbers with a user name of "V-MAIL" or some other similar identifying name.
- Assign each IVX500 port as a voice mail station.

7.6 The following programming must be completed in the IVX500 database to allow the IVX500 to leave message waiting notifications at the stations:

Station Data — Specific Station Information (DAA): Assign the circuit connected to the Quick Message Retrieval application as the alternate message source for all of the IVX500 ports in the hunt group.

7.7 To ensure that the subscribers have easy access to their voice mail messages when responding to message waiting notifications, program the following:

Applications Programming/Port Programming —Port Configuration window—Enable Remote Messaging/Lamp Notification: Enable any or all of the IVX500 ports for Remote Messaging/Lamp Notification. This allows them to turn on the message waiting indications at stations in the telephone system and to place outgoing calls.

D. MESSAGE CENTER

7.8 The IVX500 Non-Subscriber Voice mail application can be programmed to act as the message center for stations. Then, when an intercom caller calls a station that is busy or unavailable, he or she can choose to leave a message at the called station's message center (the Non-Subscriber Voice Mail application). The IVX500 is automatically called and the caller is connected directly to the station user's assigned mailbox. The caller hears the station user's personal greeting.

7.9 The message center designation also allows key-set users to quickly and easily forward calls to their voice mailboxes. To do this, a station user presses the FWD key and then the MSG key. Calls forwarded through the keyset are then sent to the station user's voice mailbox. (All station users can forward calls directly to the voice mail pilot number using one of the call forwarding feature codes. However, single-line sets do not have MSG keys that can be used for forwarding to the message center.)

7.10 To use the message center features, perform the following GMX-152D database programming:

Station Data — Specific Station Information (DAA): Program the desired stations to have the circuit connected to the Non-Subscriber Voice Mail application as the message center.

E. CAMP-ON TONES

7.11 When callers hear busy signals when calling the IVX500, they can simply wait off hook (camp on) until the called port is available. To prevent the camp-on tones from being sent to the IVX500, perform the following database programming in the telephone system:

Station Data — Specific Station Information (DAA): Program all the IVX500 circuits to disallow camp-on tones.

7.12 To allow the IVX500 to recognize camp-on tones when placing a call, the Camp-On timer must be adjusted.

Timer Values (AB): Change the Camp-On timer to 10 seconds (default is 3 seconds).

F. VALIDATED MAILBOX NUMBERS

7.13 This feature affects calls transferred to voice mail or placed through an automated attendant on the IVX500. If *all* mailbox numbers and extension IDs match extension numbers (are “associated”), the Validate Voice Mailbox Numbers option should be enabled to allow the system to check that the number entered by the caller is valid. If there are mailbox numbers that do not match an extension number (non-associated), there is no need to validate and this option should be disabled.

7.14 If the telephone system is programmed to validate voice mailbox numbers, and the caller dials a number that does not have an associated mailbox on the IVX500, the number will be considered invalid even if a *non-associated* mailbox with that number exists.

Miscellaneous System Data (AF): If all mailboxes and extension IDs on the IVX500 are marked as “associated” and match the extension numbers in the telephone system, enable the Voice Mailbox Validation flag.

G. CALL FORWARDING

7.15 Users can have calls sent to their voice mailboxes by using the call forwarding feature to send calls to the hunt group pilot number. The proper mailbox number is automatically dialed when the IVX500 answers the forwarded call.

7.16 When a call is forwarded to the hunt group, it may have to try more than one port before reaching one that is available. If the “number of day/night rings” is changed to more than one ring in the IVX500 database, the IVX500 will need enough time to search for an available port and allow the number of day/night rings at the selected port before the Forward No Answer timer expires and the KSU retrieves that call. Ensure that the following timer is set long enough to allow the IVX500 time to answer the call:

Timer Values (AB): Ensure that the Forward No Answer timer is programmed to be longer than the time it takes the call to ring at multiple ports in the Non-Subscriber Voice Mail hunt group (while searching for an available port).

7.17 To allow stations to forward calls to voice mail, the following timer (and a timer in the IVX500, described below) must be set to prevent the forward call from recalling and reaching the main voice mail greeting. If set correctly, the caller will hear the selected

mailbox greeting. Set the following timer in the telephone system:

Timer Values (AB): Set the SL Dial Initiation timer to 15 seconds (if set higher, it will tie up DTMF receivers too long).

7.18 When transferring a call to a station that is forwarded to voice mail, the telephone system will return silence or music-on-hold. If it returns silence, the IVX500 will hang up to complete the transfer when the IVX500 Call Progress Detection timer expires. If the Call Progress Initiation timer is not set high enough, this will cause the telephone system to send reorder tone which will, in turn, cause the IVX500 to connect the caller to the main greeting instead the station’s mailbox greeting. The Call Progress Detection timer must be set as described below to prevent the forwarded calls from reaching the main voice mail greeting. If set correctly, the caller will hear the selected mailbox greeting. Set the following timer in the IVX500 database:

Miscellaneous Information — Timers: Set the Call Progress Detection timer to 12 seconds (the IVX500 will hang up if nothing is detected within 12 seconds).

H. OUTSIDE CALLS

7.19 If the IVX500 is programmed to place outside calls, the IVX500 circuits cannot be programmed to use LCR. The IVX500 must be able to recognize outside dial tone when placing a call.

Station Data — Specific Station Information (DAA): Ensure that the IVX500 circuits have the proper outgoing access and toll restrictions for placing calls. *Do not* enable LCR-Only toll restriction for the ports that will be used by the IVX500 for placing outside calls.

7.20 Program the following in the IVX500 database:

Miscellaneous Information — Remote Notification Tables: When programming the Remote Notification Tables, use a trunk access code other than the LCR feature code.

7.21 If the customer wants calls to ring in directly to an application, program the appropriate telephone system trunks to ring in to the single-line circuit extension number(s) or hunt group pilot number associated with the application.

Station Data — Specific Station Information (DAA): Make sure the circuits connected to IVX500 ports that will be receiving outside calls are programmed for ring-in assignment for the appropriate trunk groups.

I. SETTING THE DATE AND TIME

7.22 To ensure that the correct time is used by the IVX500, the following information is programmed in

the IVX500 database System Maintenance window shown on page 3-63 in PROGRAMMING.

System Maintenance: Enter current date and time or set it to match the programming PC.

8. INTER-TEL GLX-PLUS SYSTEM

8.1 In order for the IVX500 to work properly with the Inter-Tel GLX-Plus System, the following installation and programming procedures must be performed.

A. HARDWARE REQUIREMENTS

8.2 The IVX500 is connected to circuits on the Accessory Port Module (APM).

B. CAMP-ON TONES

8.3 When callers dial the IVX500 and the called port is in use, they can simply wait off hook (camp on) until the port is available. To prevent the camp-on tones from being sent to the IVX500, perform the following database programming:

APM Programming: Program all the IVX500 circuits to disallow call waiting tones.

C. CALL FORWARDING

8.4 Users can forward calls to the voice mail system but their mailboxes will not automatically be dialed. The caller will hear the main system greeting and must dial the desired mailbox number. Users must forward calls to the extension number of the Non-Subscriber Voice Mail application. If they use the extension number of any other type of application, they will not be able to reach the voice mailbox.

D. HUNT GROUP ARRANGEMENT

8.5 Call forwarding can be used to create a hunt group-type arrangement for the single-line ports of the IVX500. With this arrangement, callers will automatically be forwarded to the other voice mail port when one port is busy. On each single-line circuit connected to the IVX500 do the following:

- Temporarily connect a single-line set to the station circuit. **NOTE:** If using a DC-ringing single-line set, it will ring continuously whenever on hook. This is normal and will not affect off-hook programming procedures.
- Lift the handset and dial the call forwarding destination feature code (*04). Then enter the intercom number of the other voice mail port (20 or 21) and hang up.
- Lift the handset, dial the call forwarding feature code (*01). After you hear the confirmation tone, hang up.

- Remove the phone and reconnect the IVX500 to the station circuit.

8.6 When a call is forwarded to the hunt group-type arrangement described above, it may have to try more than one port before reaching one that is available. If the "number of day/night rings" is changed to more than one ring in the IVX500 database, the IVX500 will need enough time to search for an available port and allow the number of day/night rings at the selected port before the Forward No Answer timer expires and the KSU retrieves that call. Ensure that the following GLX-Plus timer is set long enough to allow the IVX500 time to answer the call:

- Ensure that the Forward No Answer timer is programmed to be longer than the time it takes the call to ring at multiple ports in the Non-Subscriber Voice Mail hunt group (while searching for an available port).

E. IVX500 PROGRAMMING

8.7 The following IVX500 programming steps must be performed in order for the IVX500 to work properly on the GLX-Plus System. This is just a brief programming checklist; other options may apply to individual installations.

Applications Programming:

- *Applications Programming:* Create the necessary IVX500 applications using the application setup instructions in this chapter.
- *Port Programming — Port Configuration:* Select the appropriate application for each IVX500 port.

Miscellaneous Information — Telephone System Interface window:

- *System Type:* Select GLX-Plus system type. See page 3-53 in PROGRAMMING.
- *Voice Talk:* The GLX-Plus *does not* support the Voice Talk feature. See page 3-53 in PROGRAMMING.

F. SETTING THE DATE AND TIME

8.8 To ensure that the correct time is used by the IVX500, the following information is programmed in the IVX500 database System Maintenance window shown on page 3-63 in PROGRAMMING.

System Maintenance: Enter current date and time or set it to match the programming PC.

9. INTER-TEL AXXESS SYSTEM

9.1 In order for the IVX500 to work properly with the Inter-Tel AXXESS System, the following installation and programming procedures must be performed.

A. HARDWARE REQUIREMENTS

9.2 The IVX500 is installed like a single-line set. Single-line sets are installed on Single-Line Cards (SLCs) or are installed on Single-Line Adapters (SLAs), which are connected to DKSC circuits. The IVX500 must be configured for AC ringing.

9.3 When connecting the IVX500 to the telephone system single-line circuits, *do not* include the second pair (+30VDC and ground) from the single-line circuits. The +30VDC from the single-line circuits will damage the IVX500 PC.

B. ANALOG VOICE MAIL HUNT GROUPS

9.4 The Analog Voice Mail feature must be enabled in Premium Feature Selection. It requires 5 units.

9.5 An AXXESS System hunt group can be designated as a "voice mail hunt group" to enable it to contain the multiple ports of an analog voice mail unit like the IVX500. Each IVX500 port is programmed in the distribution list like a regular hunt group station. With this feature, incoming calls to the IVX500 can be sent to a single pilot number where they can be processed even if one port is busy or out of service. Each hunt group should contain one type of application (for example: an Automated Attendant hunt group, a Non-Subscriber Voice Mail hunt group, etc.).

9.6 The Quick Message Retrieval application should be assigned as the alternate message source for each of the IVX500 ports. Then, when a port leaves a message at a station, and the station user responds to the message, the Quick Message Retrieval application will be called instead of the individual port. This arrangement allows easy subscriber access to the mailboxes.

(1) The following programming must be completed in the IVX500 database:

a. *Applications Programming window:*

- *Applications Programming:* Create the necessary IVX500 applications using the application setup instructions in this chapter.
- *Port Programming — Port Configuration:* Select the appropriate Port Opera-

tion (Automated Attendant, Call Routing Announcement, etc.) for each IVX500 port.

- *Enable Remote Messaging/Lamp Notification:* Enable any or all of the IVX500 ports for Remote Messaging/Lamp Notification. This allows them to turn on the message waiting indications at stations in the telephone system and to place outgoing calls.

b. *Miscellaneous Information — Telephone System Interface window:*

- *System Type:* Select the AXXESS system type.
- *Codes:* For Message Lamp, use the Silent Message feature code (367). Set the Call Initiation and Transfer codes to #P.
- *Voice Talk:* The AXXESS System does not support Voice Talk.

(2) To program the single-line circuits and hunt groups that will be used by the IVX500, refer to the following programming areas:

a. *Service — Premium Feature Selection window:* Enable the Analog Voice Mail Hunt Groups premium feature. (This requires 5 units.)

b. *System-Wide Features — Hunt Group Programming window:*

- Program the circuits connected to the IVX500 ports as hunt group members.
- Enable the Analog Voice Mail Hunt Group flag by placing a check in the check box.

c. *Station Programming/Individual Station Programming — Miscellaneous Flags window:* Make sure that the Different Alerting Cadences and Different Ringback Cadence flags are enabled (this is the default state for these flags).

d. *Station Programming/Individual Station Programming — Miscellaneous Information window:* Assign the Quick Message Retrieval port's extension number as the alternate message source for each of the IVX500 ports in the hunt group.

C. MESSAGE WAITING NOTIFICATION

9.7 To ensure that keyset users receive the proper LED and LCD message waiting indications when they receive new voice mail messages, perform the following database programming.

Station Programming — Individual Station Information window: Assign each of the circuits connected to the IVX500 a user name of "V-MAIL" or some other similar identifying name.

9.8 The following programming must be completed in the IVX500 database to allow the IVX500 to leave message waiting notifications at the stations:

Station Programming/Individual Station Programming — Miscellaneous Information window: Assign the circuit connected to the Quick Message Retrieval extension number as the alternate message source for each of the IVX500 ports in the hunt group.

9.9 To ensure that the subscribers have easy access to their voice mail messages when responding to message waiting notifications, program the following:

Applications Programming/Port Programming — Port Configuration window—Enable Remote Messaging/Lamp Notification: Enable any or all of the IVX500 ports for Remote Messaging/Lamp Notification. This allows them to turn on the message waiting indications at stations in the telephone system and to place outgoing calls. Refer to page 3-26 in PROGRAMMING.

D. MESSAGE CENTER

9.10 The IVX500 Non-Subscriber Voice Mail application can be programmed to act as the message center for stations. Then, when an intercom caller calls a station that is busy or unavailable, the caller can choose to leave a message at the user's message center (the Non-Subscriber Voice Mail application). The IVX500 is automatically called. The caller is connected directly to the user's assigned mailbox and hears the called station's personal greeting.

9.11 The message center designation also allows keyset users to quickly and easily forward calls to their voice mailboxes. To do this, a keyset user presses the FWD key and then the MSG key. Calls forwarded through the keyset are then sent to the keyset user's voice mailbox.

9.12 To use these features, perform the following database programming:

Station Programming/Individual Station Information — Miscellaneous Information window: Program the desired stations to have the circuit connected to the Non-Subscriber Voice Mail application as the message center and/or voice mail extension.

E. CAMP-ON TONES

9.13 When callers dial the IVX500 and all ports are in use, they can simply wait off hook (camp on) until one of the ports is available. To prevent the camp-on tones from being sent to the IVX500, perform the following database programming:

Station Programming/Individual Station Information — Miscellaneous Flags window: Program all the IVX500 circuits to disallow camp-on tones.

9.14 To allow the IVX500 to recognize camp-on tones when placing a call, the Camp-On timer must be adjusted.

System-Wide Features — Timers window: Change the Camp-On timer to 10 seconds (default is 3 seconds).

F. VALIDATED MAILBOX NUMBERS

9.15 This feature affects calls transferred to voice mail or placed through an automated attendant on the IVX500. If *all* mailbox numbers and extension IDs match extension numbers (are "associated"), the Validate Voice Mailbox Numbers option should be enabled to allow the system to check that the number entered by the caller is valid. If there are mailbox numbers that do not match an extension number (non-associated), there is no need to validate and this option should be disabled.

9.16 If the telephone system is programmed to validate voice mailbox numbers, and the caller dials a number that does not have an associated mailbox on the IVX500, the number will be considered invalid even if a *non-associated* mailbox with that number exists.

System-Wide Features — Miscellaneous System-Wide Information — System Flags Programming window: If all mailboxes and extension IDs on the IVX500 are marked as "associated" and match the extension numbers in the telephone system, enable the Validate Voice Mailbox Numbers flag.

G. CALL FORWARDING

9.17 Users can have calls sent to their voice mailboxes by using the call forwarding feature to send calls to the hunt group pilot number. The proper mailbox number is automatically dialed when the IVX500 answers the forwarded call.

9.18 When a call is forwarded to the hunt group, it may have to try more than one port before reaching one that is available. If the "number of day/night rings" is changed to more than one ring in the IVX500 database, the IVX500 will need enough time to search for an available port and allow the number of day/night rings at the selected port before the Forward No Answer timer expires and the KSU retrieves that call. Ensure that the following timer is set long enough to allow the IVX500 time to answer the call:

System-Wide Features — Timers window: Ensure that the Forward No Answer timer is programmed to be longer than the time it takes the call to ring at multiple ports in the voice mail hunt group (while searching for an available port).

H. OUTSIDE CALLS

9.19 If the IVX500 is programmed to place outside calls and the telephone system the following programming is required:

Station Programming/Individual Station Information — Outgoing Access window: Make sure the circuits connected to IVX500 ports that will be placing outgoing calls have outgoing access for the appropriate trunk groups.

Station Programming/Individual Station Information — Toll Restriction window: Make sure the circuits connected to IVX500 ports that will be placing outgoing calls have the proper toll restrictions.

9.20 If the customer wants calls to ring in directly to an application, program the appropriate telephone system trunks to ring in to the single-line circuit extension number(s) or hunt group pilot number associated with the application.

Trunk Group Programming window — Stations with Ring-In: Make sure the circuits connected to IVX500 ports that will be receiving outside calls are programmed for ring-in assignment for the appropriate trunk groups.

I. SETTING THE DATE AND TIME

9.21 To ensure that the correct time is used by the IVX500, the following information is programmed in the IVX500 database System Maintenance window shown on page 3-63 in PROGRAMMING.

System Maintenance: Enter current date and time or set it to match the programming PC.

TROUBLESHOOTING

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1. INTRODUCTION

1.1 This section of the manual describes the troubleshooting procedures to follow in the event of a system malfunction. System repair is limited to replacing the PC or its parts (hard disk, Voice Processing Cards [VPCs], cables, etc.).

2. TROUBLESHOOTING CHECKLIST

2.1 To save time, perform the troubleshooting procedures in the following order:

- (1) Check to see that the telephone system (especially the single-line card connected to the IVX500 System) is operating properly.
- (2) Check to see that the IVX500 PC is operational.
- (3) Isolate the problem and refer to the appropriate troubleshooting chart (see next section).
- (4) If the problem continues to occur, try rebooting the IVX500 PC. If the problem persists, contact Inter-Tel Customer Support.

3. TROUBLESHOOTING CHARTS

3.1 The simplified troubleshooting charts located on the following pages list symptoms, possible causes, and corrective actions for problems. Look up the problem in the appropriate chart and perform the corrective actions in the order given.

NOTE: Throughout the troubleshooting section of the manual, there are numerous references to replacing the defective part and returning it for repair. However, before returning any part, proper troubleshooting procedures should be used to verify that the part is actually defective. For more information on returning defective equipment, refer to page 5-9.

3.2 The following IVX500 PC and/or applications problems are outlined in Figure 5-1 on pages 5-3 to 5-7.

- Telephone system unable to communicate with IVX500 PC.
- Programming PC unable to communicate with IVX500 PC.
- ASCII-type programming terminal unable to communicate with IVX500 PC.
- Unable to access desired voice IVX500 application.
- When power is turned on, the IVX500 PC does not boot up properly.
- Automated attendant not responding properly.
- Automated attendant not receiving incoming calls; callers routed to primary attendant instead.
- Automated attendant indicates that an extension number is invalid even though it exists on the telephone system.
- Automated attendant transfers calls directly to voice mail without trying the extension number first.
- Unable to record any voice mail greetings or messages and/or unable to hear any voice prompts.
- Voice processing applications are slow.
- Both internal and remote users have no message notification after receiving voice messages in their mailboxes.
- Audio volume levels from IVX500 applications are too low or too high.
- No audio from IVX500 applications.
- Station has message waiting indication from voice mail, but associated mailbox has no message.
- When an automated attendant recall is transferred to a mailbox, the person's directory name is not played.
- Outside callers bypass main system greeting.
- The IVX500 PC date and/or time is incorrect.
- Callers from the telephone system unable to hear any voice prompts.
- When power is turned on, the IVX500 PC beeps repeatedly and does not boot up properly.

FIGURE 5-1. TROUBLESHOOTING CHART

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
Telephone system unable to communicate with IVX500 PC	Programming error	Make sure the appropriate number of ports are assigned to each IVX500 application. See PROGRAMMING, page 3-25. Also, make sure the telephone system's single-line ports are programmed properly. See the APPLICATION & TELEPHONE SYSTEM SETUP section.
	IVX500 PC not detecting ring signals (will not answer)	AC-version VPCs must be connected to AC-ringing single-line circuits and DC-version VPCs must be connected to DC-ringing single-line circuits. If necessary, adjust the minimum ring signal on/off timers. See PROGRAMMING, page 3-54.
	Loose or defective cabling between the telephone system and the IVX500 PC	Check the cabling connecting the telephone system to the PC.
	Defective single-line card or VPC	Replace the defective card.

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
Programming PC unable to communicate with IVX500 PC (the monitor may display a message about being unable to communicate or losing its connection)	Programming error	Make sure the COM port and baud rate designations are set correctly. See PROGRAMMING, page 3-12. (A change in the baud rate will not take effect until the next database programming connection. The current programming session is unaffected.)
	Incorrect or loose/defective cabling between the PCs.	Check the cabling between the two PCs. See PROGRAMMING, page 3-10, for connection details.
	Defective serial port card in one of the PCs	Replace the defective card.

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
ASCII-type programming terminal (for diagnostics or loading voice prompts) unable to communicate with IVX500 PC	The programming terminal is not configured correctly or defective	Ensure that the programming terminal is configured with the parameters listed on page 1-17 in SPECS/INSTALL. Replace the terminal if defective.
	Incorrect or loose/defective cabling between the programming terminal and the IVX500 PC	Check the cabling connecting the programming terminal to the PC.
	During boot up with applications software disk inserted, the IVX500 PC may send out characters (e.g., X-OFF) that disable the terminal	Reset the terminal.
	Defective serial port card	Replace the defective card.

FIGURE 5-1. TROUBLESHOOTING CHART (CONT'D)

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
Unable to access desired IVX500 application (intercom callers hear continuous ringing; outside callers are rerouted to the primary attendant)	Programming error	Make sure the appropriate number of ports are assigned to each IVX500 application. See PROGRAMMING, page 3-25. Also, make sure the telephone system's single-line ports are programmed properly. See the APPLICATION & TELEPHONE SYSTEM SETUP section.
	Loss of connection between the telephone system and the IVX500 PC	Check the cabling connecting the telephone system to the PC.
	The IVX500 PC power switch is off or the PC is inoperative	Check to make sure the IVX500 PC power switch is on, and check the cabling connecting the system to the PC.
	A database save or restore is in progress, the PC is being reset, or the PC is starting up for the first time	Try again within five or ten minutes.

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
Unable to access desired IVX500 application (intercom callers hear busy tones and camp on until a port is available; outside callers hear ringing until a port is available)	All programmed ports are currently busy	Make sure the appropriate number of ports are assigned to each IVX500 application. See PROGRAMMING, page 3-25. Also, make sure the telephone system's single-line ports are programmed properly. See the APPLICATION & TELEPHONE SYSTEM SETUP section.
	The number of call attempts exceed the ports available through the VPCs	If the problem persists, it may be necessary to purchase and install additional VPCs.

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
When power is turned on, the IVX500 PC does not boot up properly	Diskette in floppy drive	Ensure that the PC is not trying to boot off a diskette in the floppy drive.
	The two-pin AIC-to-reset switch cable is not connected properly	Be sure that pin 1 marked on each end of the cable matches pin 1 on the AIC and the PC Motherboard. (If connected incorrectly, the PC will be reset continuously.)
	The IVX500 PC's high-speed (turbo) processor mode is turned off	The IVX500 PC boots up much faster in turbo mode. Before shipping, the PC is configured with the high-speed (turbo) mode <i>always</i> enabled. Do <i>not</i> disable the turbo mode setting.
	The keyboard option in the PC's CMOS set-up routine is set to "installed"	Before removing the keyboard from the PC, always be sure to set the keyboard option to "not installed" in the Standard CMOS Setup program.

FIGURE 5-1. TROUBLESHOOTING CHART (CONT'D)

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
Automated attendant not responding properly	User error	The caller must use a DTMF phone to enter digits. Refer to FEATURES, page 2-3.
	DTMF tones not being interpreted correctly (see NOTE below)	If numbers appear to be misdialed frequently, due to trunk noise or other problems, use the digit translation feature as described on page 2-5 in FEATURES and page 3-21 in PROGRAMMING. Consult Inter-Tel Customer Support to determine if the DTMF detection/delay timers need some adjustment. See PROGRAMMING, page 3-54.
	Programming error	Automated attendant station(s) must be designated in the database. Refer to PROGRAMMING, pages 3-17 and 3-46.
	Defective VPC or hard disk	Replace the defective PC component.

NOTE: Due to the natural characteristics of the CO trunk, the volume level of DTMF tones transmitted over the trunk may be substantially reduced before reaching the telephone system. This natural degradation in tone volume may adversely affect the reliability of the automated attendant feature. Other factors which can affect automated attendant performance are CO trunk noise, the quality of the recording, and the quality and strength of the DTMF tones generated by the calling phone itself.

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
Automated attendant not receiving incoming calls; callers routed to primary attendant instead	Programming error	Ensure desired trunks (in day and/or night mode) are programmed to ring in directly to the proper automated attendant ext. number. See FEATURES, page 2-3, and APPLICATION & TELEPHONE SYSTEM SETUP, page 4-5.
	Programming error	If using Voice Computer Hunt Groups, the programmed dial string may be incorrect. See PROGRAMMING, page 3-56.
	Loose/defective cabling between the telephone system and the IVX500 PC	Check the cabling connecting the telephone system to the PC.
	Defective single-line card or VPC	Replace the defective card.

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
Automated attendant indicates an extension number is invalid even though it exists on the telephone system	The extension does not have an associated mailbox or extension ID number assigned	Extension ID numbers provide the automated attendant application a means for transferring calls to extensions which do not have mailboxes. See PROGRAMMING, page 3-27.

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
Automated attendant transfers calls directly to voice mail without trying the extension number first	Programming error	Make sure the mailbox is associated with a corresponding extensions number. See PROGRAMMING, page 3-41.

FIGURE 5-1. TROUBLESHOOTING CHART (CONT'D)

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
Unable to record any voice mail greetings or messages and/or unable to hear any voice prompts	Incorrect strap settings on one or more of the VPCs	Ensure that all VPCs have their jumper straps set in the proper positions. Refer to step 5 on page 1-6 in SPECS/INSTALL.
	Loose/defective cabling between the IVX500 PC and the telephone system	Check the cabling.
	Tip and ring are reversed on DC-ringing VPCs	Make sure the modular jack assemblies connected to the IVX500 PC are wired correctly. See Figure 1-1 on page 1-8.
	Defective VPC	Replace the VPC.

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
Voice processing applications are slow (e.g., voice prompts are slow or are delayed in playing)	The IVX500 PC's high-speed (turbo) processor mode is turned off	For optimal performance, the IVX500 PC is configured with the high-speed (turbo) mode <i>always</i> enabled. Do <i>not</i> disable the turbo mode setting.

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
Both internal and remote users have no message notification after receiving voice messages in their mailboxes	Message notification extension numbers have not been programmed	Each mailbox must have a station that will receive message notification whenever the mailbox receives a message. See PROGRAMMING, page 3-39.
	The mailbox is not associated with the proper station	If the mailbox is associated with a station or hunt group it should be marked in the database as "associated." See PROGRAMMING, page 3-39.
	The telephone system has not been programmed properly	Perform the programming procedures outlined in the APPLICATIONS & TELEPHONE SYSTEM SETUP section.
	There is no outgoing access dial string programmed for placing an outgoing call	Program a dial string to select a trunk for placing remote notification calls. (Make sure that the port has been programmed with outgoing access for the selected trunk group in the telephone system database.) See PROGRAMMING, page 3-51.
	The telephone system's message waiting/cancel feature codes do not match the IVX500	Ensure that the feature codes shown in the telephone system interface programming window match the feature codes that are programmed for the telephone system. See PROGRAMMING, page 3-53.
	Remote message/lamp notification is not enabled or programmed incorrectly	Remote messaging/lamp notification must be enabled and the desired port(s) must be selected to place outgoing calls. See PROGRAMMING, pages 3-18, 3-26, and 3-42.

FIGURE 5-1. TROUBLESHOOTING CHART (CONT'D)

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
Audio volume levels from IVX500 applications (such as voice mail and automated attendant) are too low or too high	Programming error	To adjust the volume level for all of the voice ports, refer to PROGRAMMING, page 3-57.

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
No audio from IVX500 applications (such as voice mail and automated attendant)	Loose or defective cabling between the IVX500 PC and the telephone system	Check the cabling.
	Incorrect strap settings on one or more of the VPCs	Ensure that all VPCs have their jumper straps set in the proper positions. Refer to step 5 on page 1-6 in SPECS/INSTALL.
	Defective VPC or single-line card	Replace the defective card.

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
Station has message waiting indication from voice mail, but associated mailbox has no message	Station is assigned as the message notification station for one or more unassociated mailboxes	Check the unassociated mailboxes to find the waiting message. See FEATURES, page 2-9, and PROGRAMMING, page 3-39, for more information.

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
When an automated attendant recall is transferred to a mailbox, the person's directory name is not played	Voice Computer Hunt Group dial rule string is incorrect	Ensure that the dial rule that identifies the recall source is correct (dial rule 15 in the IMX and GMX systems). See APPLICATION & TELEPHONE SYSTEM SETUP, pages 4-4 and 4-6.

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
Outside callers bypass main system greeting (instead they hear directory instructions or invalid number response)	The telephone system's Voice Mail/Computer Dialing Delay timer is set too high	Try setting the timer to a lower value. Refer to the telephone system's installation manual.
	The IVX500 Voice Computer Hunt Group Dial String timer is set too high	Try setting the timer to a lower value. See page 3-54 in PROGRAMMING.

FIGURE 5-1. TROUBLESHOOTING CHART (CONT'D)

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
The IVX500 PC date and/or time is incorrect	The IVX500 PC may have been set to match the programming PC, and the programming PC was incorrect	Set the correct date and time using the System Maintenance window. See page 3-63 in PROGRAMMING.

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
Callers from the telephone system unable to hear any voice prompts (however, when a test set is connected to the single-line circuit, voice prompts can be heard)	Tip and ring are reversed on DC-ringing VPCs	Make sure the modular jack assemblies connected to the IVX500 PC are wired correctly. See Figure 1-1 on page 1-8.

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
When power is turned on, the IVX500 PC beeps repeatedly and does not boot up properly (i.e., the PC beeps 1-7 times, pauses, and then repeats). See note below for a list of error beep interpretations.	Incorrect DIP switch or jumper strap settings on the Audio Interface Card (AIC)	Ensure that the AIC DIP switches and jumper straps are set in the proper positions. Refer to step 4 on page 1-6 in SPECIFICATIONS & INSTALLATION.
	Incorrect strap settings on one or more of the VPCs	Ensure that all VPCs have their jumper straps set in the proper positions. Refer to step 5 on page 1-6 in SPECIFICATIONS & INSTALLATION.
	Software problem	The PC should be used for IVX500 applications only. If necessary, delete any unneeded peripheral software and re-install the IVX500 applications software as outlined in SPECIFICATIONS & INSTALLATION on page 1-17.
	Defective AIC, VPC, or PC	Replace the defective card(s) or the PC.

NOTE: The number of beep tones identifies the type of error that has occurred, as listed below:

NO. OF BEEPS	MEANING
1	The AIC driver is already installed at this address.
2	Another program or driver is installed using the specified AIC driver user interrupt. (There should be no other software installed on the IVX500 PC.)
3	Invalid AIC command line parameter(s) in the driver.
4	Invalid AIC address was specified by the driver (must be between 200 and 3F8 hex).
5	Invalid AIC interrupt was specified by the driver (must be between 60 and 67 hex).
6	The AIC switch settings do not match the address specified by the driver.
7	Another card is installed at the same address that was specified for the AIC, or the AIC has malfunctioned.

4. CUSTOMER SUPPORT

A. TECHNICAL SUPPORT

4.1 If problems persist when installing or servicing Inter-Tel equipment: While *on site* and *with the proper troubleshooting tools* available, *certified technicians* may contact Inter-Tel's Customer Support Department for assistance. They can be reached from 7:00A.M. to 5:00P.M. Mountain Standard Time at 602-961-9000 or 1-800-669-5858.

B. EMERGENCY ASSISTANCE

4.2 After office hours and on weekends, call 602-961-0277 and leave your message with the voice mail service. A Customer Support Product Specialist will return your call as soon as possible, usually within an hour. Please remember that this is an emergency number for *critical system problems only*. Sales questions, equipment orders, etc., can only be handled during normal business hours.

5. DEFECTIVE UNIT RETURN POLICY

IMPORTANT

For complete information on returning equipment, refer to the *current* Inter-Tel Material Return Policy (document part number 835.1065). This document includes specific information on the following subjects: warranty, procedures to follow when returning equipment, equipment damaged in shipment, insurance, repair policy, and advance replacement policy.

5.1 TO RETURN A DEFECTIVE UNIT FOR REPAIR:

- (1) Obtain an MRA number from Inter-Tel's Order Processing Department. Write the MRA number and ATTN: MRA on the outside of each carton being returned. *INTER-TEL DOES NOT ACCEPT EQUIPMENT IF THE MRA NUMBER IS NOT ON THE CARTON.*
- (2) On the repair tag, identify the unit by the equipment name, part number, and serial number. (Repair tags are available from Inter-Tel.)
- (3) Describe the defect in detail and, if applicable, the circuit number related to the defect. Include applicable alarm/error messages, if possible. Document the estimated length of time the part had been in service prior to the failure. *ALL EQUIPMENT RETURNED FOR REPAIR MUST BE TAGGED WITH COMPLETE DETAILED INFORMATION REGARDING THE DEFECT OR IDENTIFICATION OF THE PROBLEM.*
- (4) Attach the repair tag to the defective equipment. (Retain a copy for your files.)
- (5) Properly package the equipment for shipping (i.e., return in original package or equivalent). *WARRANTY MAY BE VOIDED IF EQUIPMENT IS IMPROPERLY PACKAGED.*

REPLACEMENT PARTS

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1. INTRODUCTION

1.1 This section provides the information necessary to order and stock replacement parts for the Inter-Tel IVX500 System.

- Required date of shipment
- Part number(s) of equipment ordered
- Quantity required

2. ORDERING PROCEDURE

2.1 When ordering equipment for the IVX500 System, provide the following information to the order processing clerk:

- Company name
- Purchase order number

3. REPLACEMENT PARTS LIST

3.1 Figure 6-1 lists authorized parts available for replacement on the IVX500 System.

4. RECOMMENDED SPARE PARTS

4.1 Inter-Tel recommends keeping several spare PCs on hand to ensure the best possible customer service.

FIGURE 6-1. REPLACEMENT PARTS

<u>DESCRIPTION</u>	<u>PART NUMBER</u>
IVX500 PC	
IBM-386 (or compatible) Personal Computer (PC) Assembly ..	550.6000
PC Chassis with Power Supply	440.6002
Power Supply	691.0100
PC Motherboard (80386, 33MHz, without RAM)	440.6005
1MB SIMM (four are needed)	821.1035
Floppy Disk Drive (3½-inch double-sided/high-density)	550.5111
Hard Disk Drive — 200 MB	691.3010
Hard Disk Drive — 340 MB	691.3024
Disk Controller Card	691.3005
Floppy Disk-To-Controller Interface Cable	813.1105
Hard Disk-To-Controller Interface Cable	813.1557
Serial/Parallel Combination Card (SPC)	550.5110
Audio Interface Card (AIC)	550.2800
4-Port Voice Processing Card (VPC) - AC	693.2000
4-Port Voice Processing Card (VPC) - DC	693.2001
2-Port Voice Processing Card (VPC) - AC	693.2003
2-Port Voice Processing Card (VPC) - DC	693.2004

FIGURE 6-1. REPLACEMENT PARTS (CONT'D)

<u>DESCRIPTION</u>	<u>PART NUMBER</u>
IVX500 PC (continued)	
Database Programming Cable Kit (includes the following)	828.1273
Line Cord (two-pair, reversing)	813.1592
DB9 Modular Adapter (female, non-reversing, four-wire) . . .	804.2420
DB25 Modular Adapter (female, reversing, four-wire)	804.2425
DB9-to-DB25 Converter (female-to-male, non-reversing) . . .	804.2438
AIC-To-Reset Switch Interface Cable	813.1588
Optional PC Wall-Mount Shelf (fits most PC models)	691.3109
 NOTE: Depending on the specific model of PC being used, some of the parts and part numbers listed on the previous page could vary somewhat. For example, instead of a separate SPC, some PCs may have a Disk Controller Combination Card (691.3007) that is equipped with serial and parallel ports.	
 Software	
Applications Software and Database Programming Software . . .	827.7600
 Manuals	
Installation & Field Maintenance Manual	693.8000
Voice Mail User Guide	693.8001
System Administrator Quick Reference Guide	693.8002
Subscriber Quick Reference Guide	693.8003

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